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PLANNERS AND PLANNING, A REPORT FROM THE COMMUNITY COLLEGE PLANNING CENTER ON COMMUNITY COLLEGE FACILITIES.

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GROWTH OF STUDENT POPULATIONS AND THE KNOWLEDGE EXPANSION NECESSITATE CAREFUL PLANNING IN THE COMMUNITY COLLEGE. PLANT PLANNING DEPENDS ON INSTRUCTIONAL PROGRAM PLANNING, STAFF EMPLOYMENT AND ORGANIZATION, STUDENT PLANNING, FUNDING AND COMMUNITY RELATIONSHIPS. PLANNING SHOULD INVOLVE THE ADMINISTRATIVE STAFF, LIBRARIAN, FACULTY, OTHER STAFF, RESOURCE PERSONNEL AND THE ARCHITECT. MASTER PLANNING, AN IMPORTANT FIRST STEP, INCLUDES COMMUNITY ANALYSIS, COLLEGE ANALYSIS, MASTER SCHEDULING, PREPARATION OF EDUCATIONAL SPECIFICATIONS, CONSTRUCTION SCHEDULES, SITE SELECTION, AND CAMPUS PLANNING. THE CAMPUS SHOULD REFLECT PLANNING OF INSTRUCTIONAL FACILITIES, LIBRARIES AND MUSEUMS, COCURRICULUAR ACTIVITY CENTERS, INSTITUTIONAL SERVICES, PHYSICAL EDUCATION WITH ITS RELATED ACTIVITIES, AND HOUSING. IT SHOULD BE CHARACTERIZED BY INTEGRITY AND UNITY, A RELATIONSHIP TO THE COMMUNITY, FLEXIBILITY, AND GROWTH POTENTIAL. CONSIDERATION SHOULD BE GIVEN TO THE TIME TO PURCHASE OR BUILD, EXPERIMENTAL DESIGN, PLANNING FOR QUALITY, CHOICE OF AN ARCHITECT, SITE ANALYSIS, USE OF EXISTING FACILITIES, CLASSROOM SIZE AND TYPE, UTILITIES, TEMPORARY BUILDINGS, SCIENCE LABORATORIES, RESEARCH FACILITIES, STUDY SPACES, TELEVISION, THE BOOKSTORE, THE COLLEGE UNION, AND FOOD SERVICES. (WO)

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PLANNERS & PLANNING

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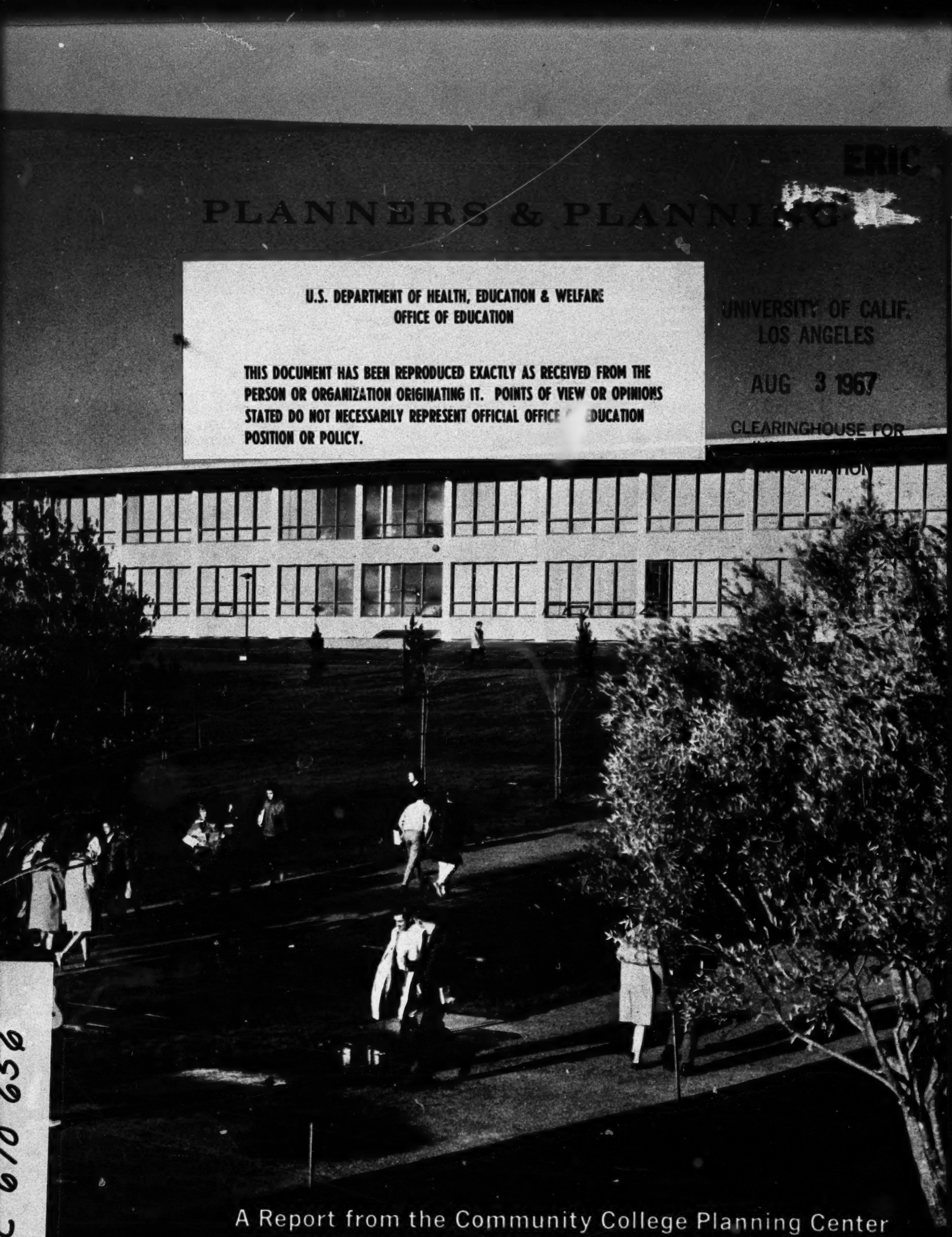

JC 670 656

A Report from the Community College Planning Center
on Community College Facilities

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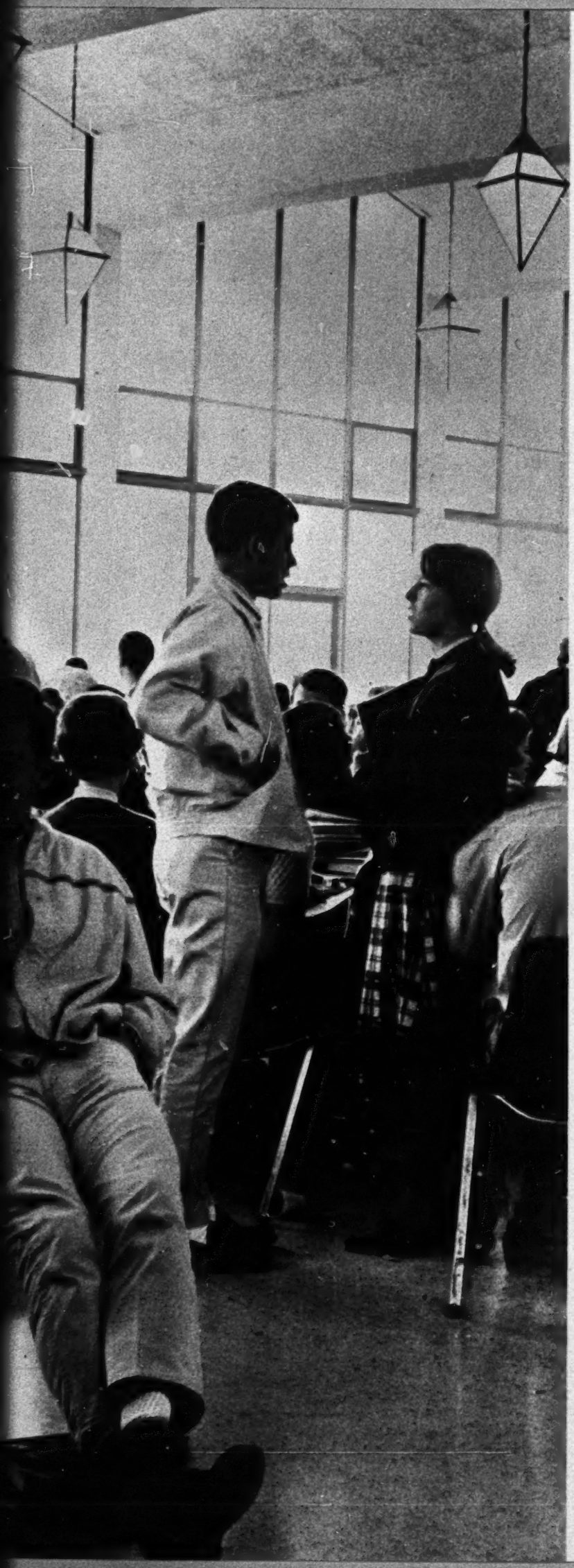
PLANNERS & PLANNING

A REPORT FROM THE COMMUNITY COLLEGE PLANNING CENTER ON COMMUNITY COLLEGE FACILITIES



From the time the nation's first institution of higher education opened its doors in 1636, many hundreds of colleges and universities have been built, and over 2100 still exist today. While this is a remarkable record, it is only a prologue to the future. In order to accommodate the students expected on campus in 1975, the nation must provide *twice* the facility capacity in this decade as was built in the last three centuries.

As a part of this growth pattern, there will be a continuing, urgent demand for new community junior colleges. They must be built at the rate of 20 to 30 new campuses each year for the next decade in order to house the exploding student population.

The individual citizen's desire for self-betterment and for the betterment of his children is at the root of the great expansion of higher educational facilities. The full impact of this educational expansion has still not been felt. Today, in rapidly growing areas, plans for one junior college campus are no sooner completed than action must be taken to acquire land and plan the next.

And as individual desires change so does the nature of education. New elements are being introduced into the curriculum such as area studies, new sciences, and an increasing number of language courses. New techniques of instruction including language laboratories, closed-circuit television, and teaching machines, are available. New divisions of the academic year — the trimester system, the winter term off, and asymmetrical scheduling of classes — are being examined. New resources for instruction such as learning resource centers, information retrieval systems, and automatic information centers at library tables have

all gained some acceptance. And who shall be educated? Communities are beginning to recognize that their populations include adults needing retraining, youth needing remedial work, and culturally disadvantaged individuals needing maximum encouragement.

These developments suggest that newer ways of organizing space, of constructing buildings, and of spending money on equipment and technical personnel are needed. But for none of these are adequate guidelines presently available.

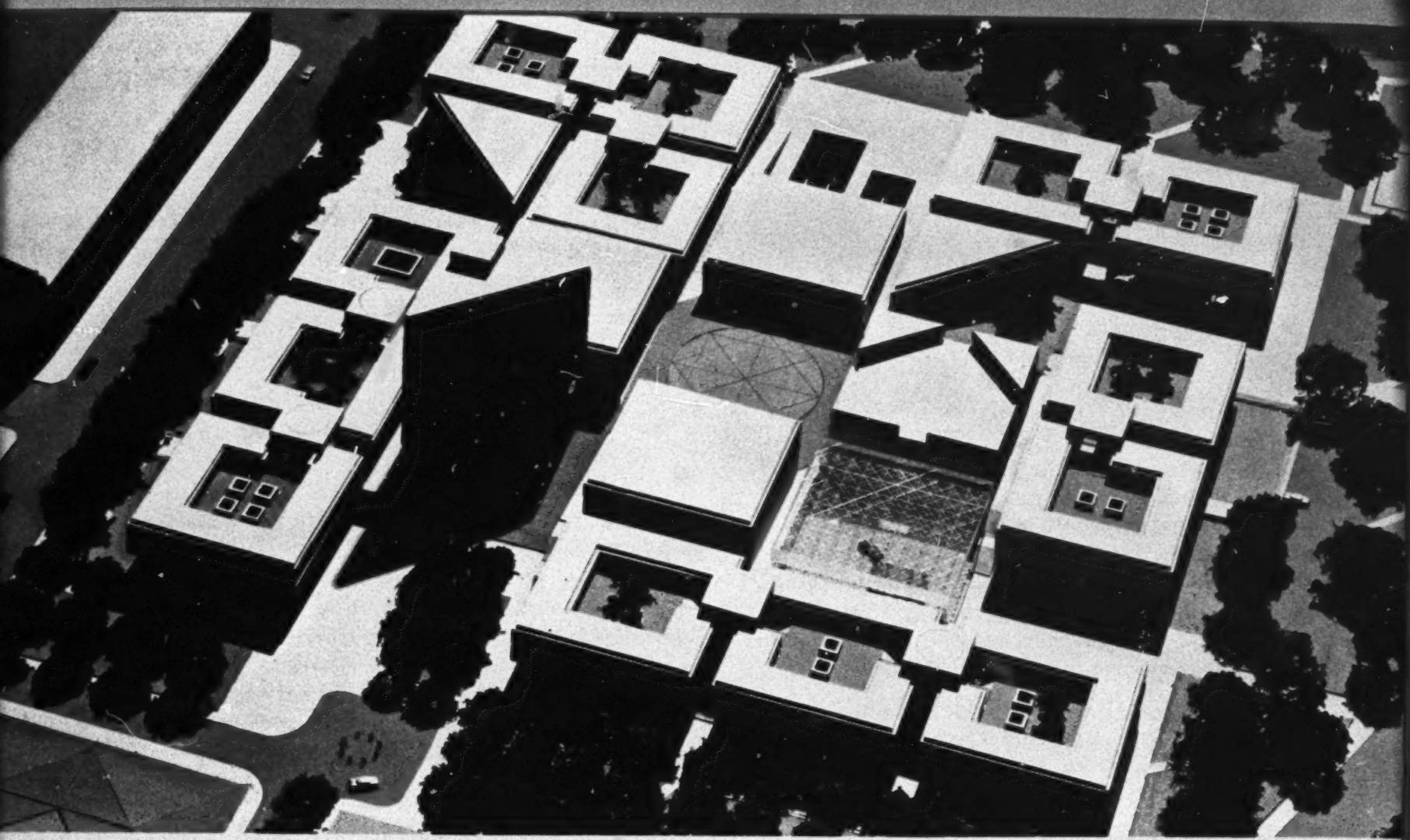
And, if this is not enough, community colleges are expensive. In California, for example, a new campus for a student body of five thousand students may cost in the neighborhood of eighteen million dollars. Another way of stating this is to say that the cost of the physical plant may be some $3600 per student.

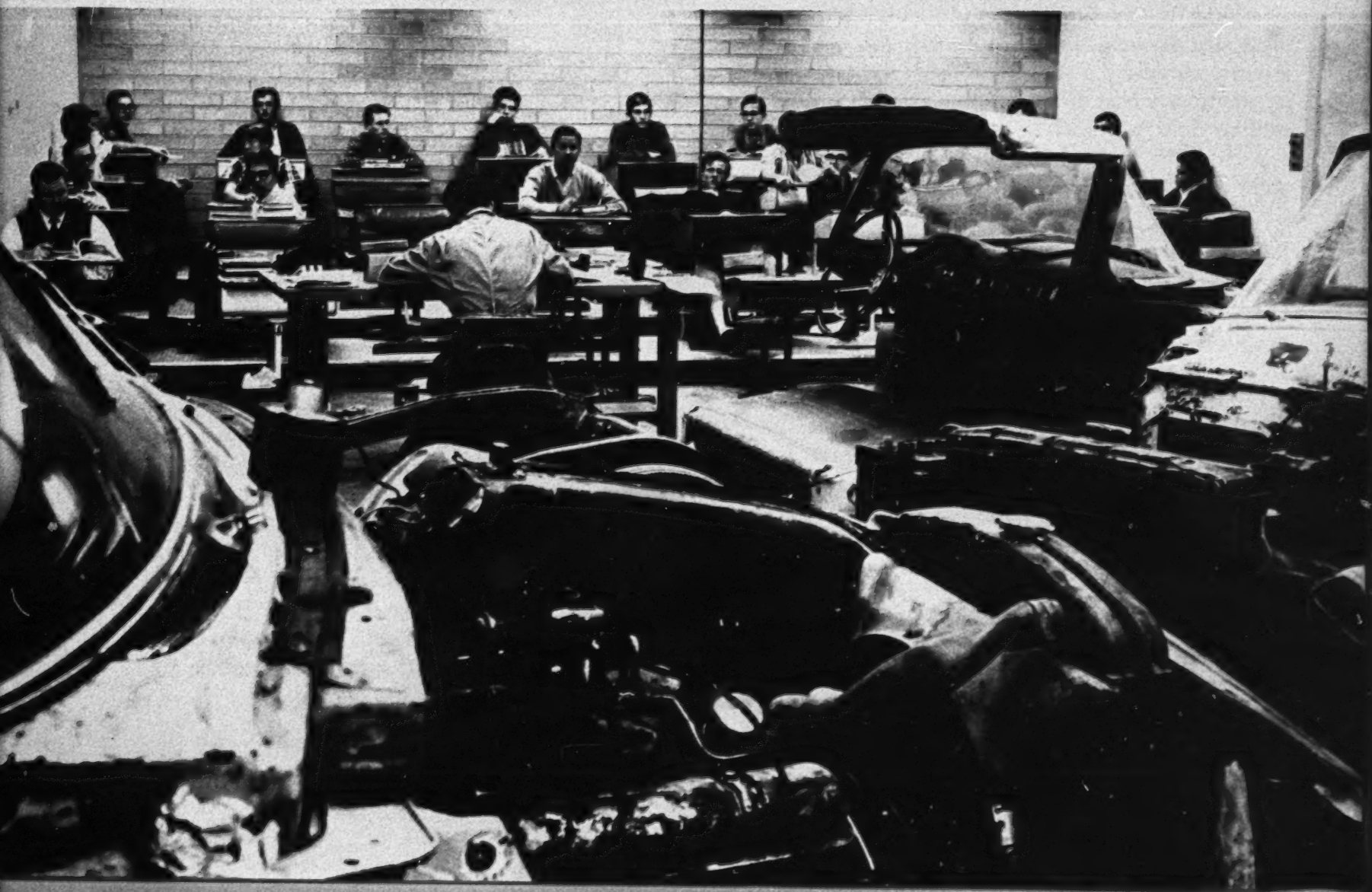
As a complicating factor, community colleges are in competition with other vital community services such as hospitals, roads, police departments, etc. Thus, the college planner may be tempted to cut corners. But the citizen who is willing to pay for safety belts and premium tires for his family's safety on the freeway will not likely – when he knows the facts – wish to endanger his childrens' educational future with a less-than-adequate community college. On the contrary, he will very likely want to make substantial sacrifices for his childrens' education.

Out of this welter of forces and complexities two major problems emerge and must be stressed. The first is that of the sheer numbers. From less than five million college students in 1964 the number will rise to seven million by 1970, and to at least eight and a half million five years later. Merely reproducing buildings of traditional form and function, no matter how rapidly, cannot be expected to handle millions of additional students. The solution to this problem must depend in part on more efficient use of space – building spaces which can be utilized more flexibly and effectively – spaces planned to accommodate needs which are as yet unknown.

The second critical problem is the accelerating expansion of knowledge. This implies that a college must teach more to each student as well as to more students. This problem is especially acute in the community college which embraces both academic and technical-vocational fields of knowledge. Several alternative solutions are open such as 1) limiting what students may study, 2) limiting educational opportunity to only those students with unusually great aptitude for study, or 3) finding more efficient ways of organizing the curriculum and the conditions under which it is taught. Though the last option is clearly preferable, it demands a more rational and inventive approach to planning and building facilities.

But in response to this pressure, those who must create new colleges may be sorely tempted to rush prematurely into construction – into actual work with bricks and mortar. Americans, unfortunately, often tend to build first and complain later. The knowledge that there are better though sometimes more demanding ways of planning and building facilities may perhaps, be acquired only through the lesson of bitter experience. It is from this background that this booklet emerges, offering practical, procedural suggestions made by those who have suffered the travail.





Chapter I Prologue to Planning

The construction of any physical plant demands a preoccupation with material things. But in planning an educational institution this preoccupation must be preceded by a concern with educational ideas and values. Before a college can assume effective form, someone must first determine its intended purposes and must translate these into specific facilities requirements. While the planning of any institution is a difficult undertaking, it is especially so for the community college because of the need to offer a variety of programs and yet achieve an integrated campus. Thus, planning a community college is both an intricate and an important challenge which demands that ingenuity and intelligence be applied to problems for which traditional solutions may not always be appropriate.

Since functional requirements should determine the physical form, it is important to establish the specific tasks which the publicly supported community junior college will perform. As will be seen, each function implies certain basic planning and building considerations.

THE FUNCTIONS OF COMMUNITY COLLEGES

- Community colleges provide collegiate work normally found in the first two undergraduate years, thus enabling students to progress smoothly from two-year to four-year institutions. Thus, students who must reside at home – primarily for financial reasons – are allowed to begin their college careers.
- Community colleges attempt to impart to each student an understanding of his national heritage, the skills essential to clear thought and self-expression, and the chance to know himself as he exists within his environment.
- Community colleges offer vocational and technical education courses to those students who will enter useful and satisfying vocations not requiring a formal college degree.
- Community colleges offer adult education to satisfy the vocational and avocational aspirations of people who will usually attend classes in the evening.
- Community colleges provide guidance and counseling services to help students make sound decisions about their academic work and future careers.
- Community colleges serve as centers for the cultural life of the community.

Planning a Community College: General Problems Community college planners must take into account at least six general categories of action in order to provide for the functions just outlined. If any one category is neglected the many parts of the college are likely to be out of balance and the completed campus may lack integrity and cohesion.

These six categories include:

1. Planning and developing instructional programs.
2. Employing and organizing a staff and faculty.
3. Enrolling, counseling, and registering students.
4. Providing and allocating funds for plant, equipment, and ongoing operations.
5. Relating the program to the changing needs of the community.

Only when satisfactory solutions to the problems in these areas are found will there be a real likelihood of solving the problems inherent in the final category:

6. Providing an effective, efficient, and satisfying physical plant.[1]

When viewed in the context of a rapidly changing society and the dynamic evolution of American education, the full implications of these six categories become tremendously complex and diffuse. For example, a community may simply establish a junior college for the purpose of educating its youth. But the college, in turn, may directly affect the community in such important areas as its morale, wealth, general appearance, and even its future. Physically, the community college campus is only an arrangement of spaces and facilities. Nevertheless, it expresses the ideals of the supporting community, and at the same time provides the educational program which, hopefully, will produce future citizens and leaders.

[1]Adapted from *Establishing Junior Colleges,* Occasional Report No. 5, Junior College Leadership Program, University of California at Los Angeles, 1964.

Establishing a Community College: In the past, junior or community colleges have often been created simply by extending a high school program into the thirteenth and fourteenth grades and housing them in high school buildings—sometimes during the later afternoon and evening hours. Some four-year colleges, beset with financial difficulties, have been contracted so that resources could be concentrated in two strong years rather than spread over four weak ones; a number of private junior colleges, such as Stephens College and Colorado College for Women, have come into existence by this route. Still another device has been the infrequently attempted separation of the lower two years from a collegiate program to create a new institution. In a sense, the first American junior college, located at Joliet, Illinois, represented a hope of President Harper of the University of Chicago that a number of such institutions might relieve the University of the burden of lower-level undergraduate instruction. Currently, however, as the junior college assumes its place in the structure of American higher education, the most prevalent method of creating it, whether public or private, is as an independent entity, having its own board of trustees, its own educational mission, and its own base of financial support.

The decision to create a private junior college rests with a supporting constituency, such as a church, and is made effective through a board of higher education, board of governors, or some similar agency. Such a decision rests on factors of constituency or regional need, financial ability, and the willingness of the state to incorporate the college.

Establishing a public community college normally requires a more complex series of steps. The state government first must adopt either permissive or mandatory legislation which allows for the creation of such colleges. Legislation may allow local school districts to create colleges, allow local groups of citizens to form a district for the purpose of creating a college, create colleges outright (often in conjunction with the state university), or require that the entire state be divided into

community college districts. Since each state is responsible for its own educational plans and patterns, it is not surprising that state laws pertaining to junior colleges vary widely and that only a few generalizations are possible.

While only one state – California – actually mentions junior college education in its Constitution, almost all states now have enabling legislation pertaining to the junior college which includes these institutions as an integral part of the state's post high school education. The predominant method of institutional organization is through the creation of either unified or special junior college districts, with over forty states following one of these two patterns.

Even with the variance in state enabling legislation, it is clear that if a comprehensive community junior college is designed to serve a particular geographic area, the area so served should contribute to the college's support, and citizens from this area should be represented on its governing board.

In over thirty states the enabling legislation also stipulates criteria or processes necessary for the creation of a college. These may involve voter petitions, elections, or action by an existing local board of education. Approval by the state board of education or some other state agency is typically required before a popular vote can be taken to provide tax monies for community college purposes.

The favorable vote of the people alone is not enough to establish a junior college district if, according to the state's criteria, the assessed valuation of property in the proposed district is too low to support the college. In at least six states the number of prospective students is also a relevant criterion. A few states require an educational needs survey before a college is authorized while others specify which curricula may or must be offered, and even specify certain physical facilities. The proximity of junior colleges to other higher educational institutions is limited in some states on the assumption that an overlap of functions should be avoided.[1]

[1]These generalizations have been drawn from S. V. Martorana, "The Legal Status of American Public Junior Colleges," in a basic source book on junior college legislation, accreditation, and individual college descriptions:

American Junior Colleges, American Council on Education, 1785 Massachusetts Avenue, N.W., Washington, D.C. 20036 (Cost $10).

Additional references on legislation affecting the junior college are listed below, the first two containing lengthy sections on the laws of the fifty states:

D. G. Morrison and S. V. Martorana, *Criteria for the Establishment of Two-Year Colleges*, Bulletin 1961, No. 2, OE-57000 (Washington: Government Printing Office, 1960).

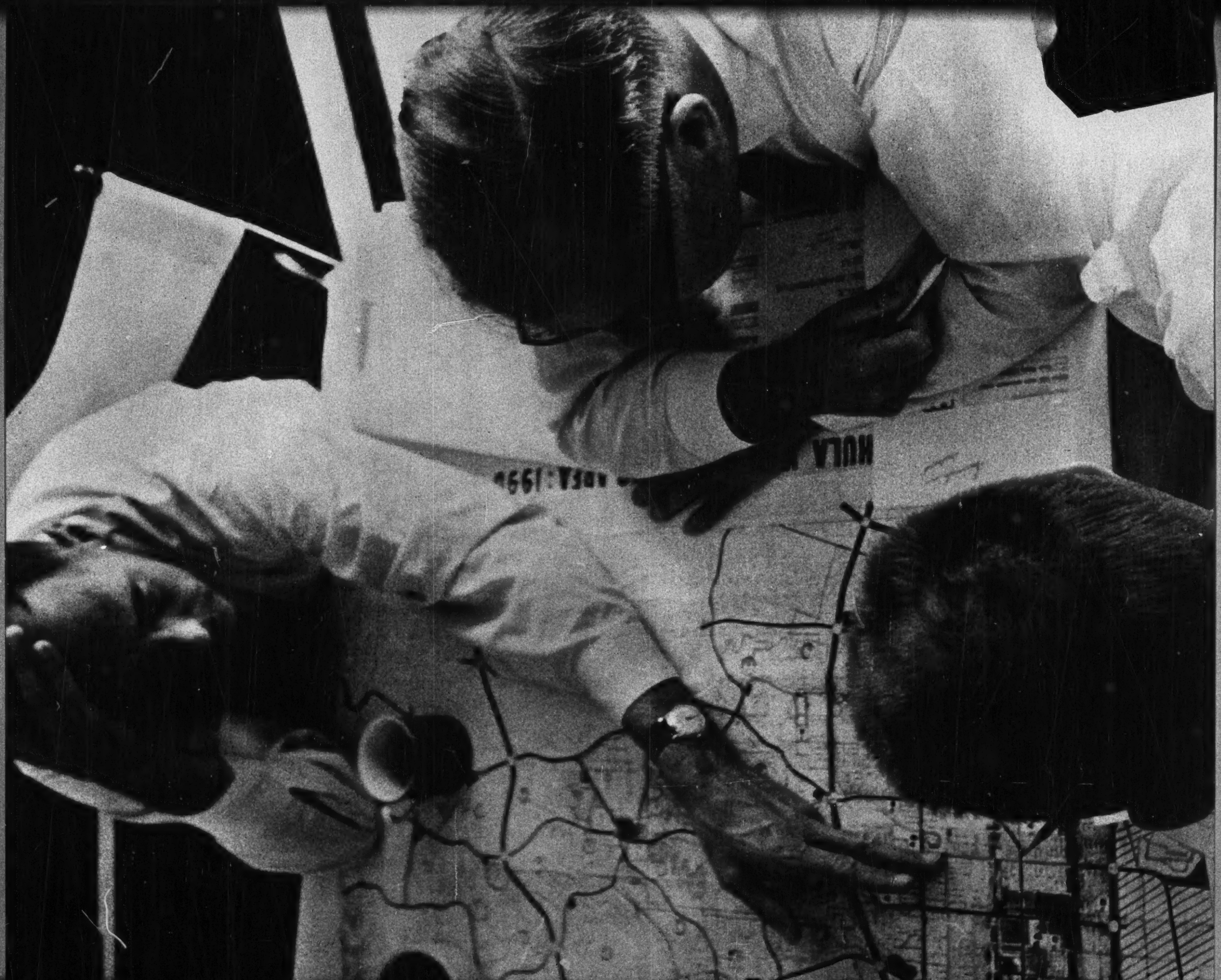
D. G. Morrison and S. V. Martorana, *State Formulas for the Support of Public Two-Year Colleges*, Bulletin 1962, No. 14 OE-57004 (Washington: Government Printing Office, 1962).

Establishing Legal Bases for Community Colleges, Proceedings of a conference sponsored by the Commission on Legislation of the American Association of Junior Colleges, October 20-21, 1961, Chicago, Illinois (Washington: American Association of Junior Colleges, 1962).

Principles of Legislative Action for Community Junior Colleges, a handbook. Prepared by the Commission on Legislation of the American Association of Junior Colleges, 1962 (Washington: American Association of Junior Colleges, 1962).

S. V. Martorana and Ernest V. Hollis, *Survey of State Legislation Relating to Higher Education*, circular, published annually by the U. S. Office of Education, OE 50008.

S. V. Martorana and James K. Palmer, "Recent State Legislation Affecting Junior Colleges," and "Recent Legislative Proposals Affecting Junior Colleges," *Junior College Journal* XXXII (February and March, 1962) pp. 316-330, 397-405.



Chapter II Planners and Procedures

The Board of Trustees: Although planning procedures (some of which are far from ideal) vary from state to state, experience and theory can suggest what is at present the most desirable approach to planning.

The first essential, after a community has decided to create a college, is to establish the board of trustees. The board in American higher education is the legal custodian of the college and of all its possessions. It is the board's duty, within limitations which state legislation may impose, to organize itself and set rules for its own conduct, to acquire and maintain property, to set policies for the college, and to appoint the chief college officer or officers.

The President: Ideally a board should turn its attention first to the selection of a president. It is he who should initiate a master plan, conduct the planning of the curriculum, direct surveys of educational needs, recommend suitable sites for the location of the campus, prepare educational specifications, and work with architects and contractors to bring the campus into existence.

Boards may be tempted to do much of this before appointing a president and in some states may be forced to do so. But such a procedure is unwise, for board members can rarely afford to spend the time setting institutional goals, selecting a site, and reaching agreements with architects and contractors before the president is appointed. These negotiations are intricate, detailed, and time-consuming. If it is at all possible, the board should assume that the planning process begins with the appointment of the president.

Educational Objectives: The president, as a professional and as the board's executive officer, should concern himself at once with the educational goals which the new institution will seek to achieve. The building plans, the faculty, and the long-term functioning of the college will only be as good as the goals and standards established. Such knotty problems as the amount of emphasis to be placed on general education, the degree and kind of technical-vocational education, and the place of counseling and guidance in the program must all be resolved. Few presidents, if any, will have the breadth of knowledge or depth of wisdom to make such decisions unaided; normally, in addition to appointing their chief administrative officers, they will want to form study groups, task forces, and research teams of lay and professional people to assist them in formulating purposes, goals, and broad educational policy.

Planning – the Beginnings: The nature of the college begins to take shape as the president selects his administration and continues to be molded as he and they work with faculty in drafting the educational objectives of the college and as he examines the many considerations of site selection. Nor does the planning process end when the first wave of students descends upon the newly-built campus; the complex problems of growth and change begin to make themselves felt even before the first buildings are completed and continue to demand planning and modification throughout the life of the college.

This pattern is not always followed. Some boards have selected an already existing building, as did the Board of Higher Education in New York when it created a junior college, advertised the opening of the college in the press, and then got around to appointing a president. A more acceptable procedure is to emphasize the centrality of the presidential role.

Nonetheless, the most crucial part of the campus planning process occurs in the months between presidential appointment and the first

day of classes. Ideally, it is during this period that the actual creation of the college and its campus should take place, and it is the planning team of educators and specialists who must carry out this task.

The Planning Team: The successful creation of a community college campus requires a coordination of knowledge, skill, and effort of the highest order. Presidents cannot do everything themselves. They need the talent and knowledge of technical specialists, who, in turn, must be aided by the counsel of community members, the advice of legal and financial experts, the experience of other planners, and the information and aid available from countless other public and private sources. While the exact composition of the entire planning team will vary from college to college, there are some members who are central to any planning team.

The President: While the president should have the help of a competent planner and other staff members who can suggest and carry out the various facets of the planning and building program, he himself is responsible for the final product and must be intimately involved in its various phases. Presidents who have not been sufficiently informed and involved have found to their sorrow that they could not deal effectively with either their own staff, the community, or the state legislature.

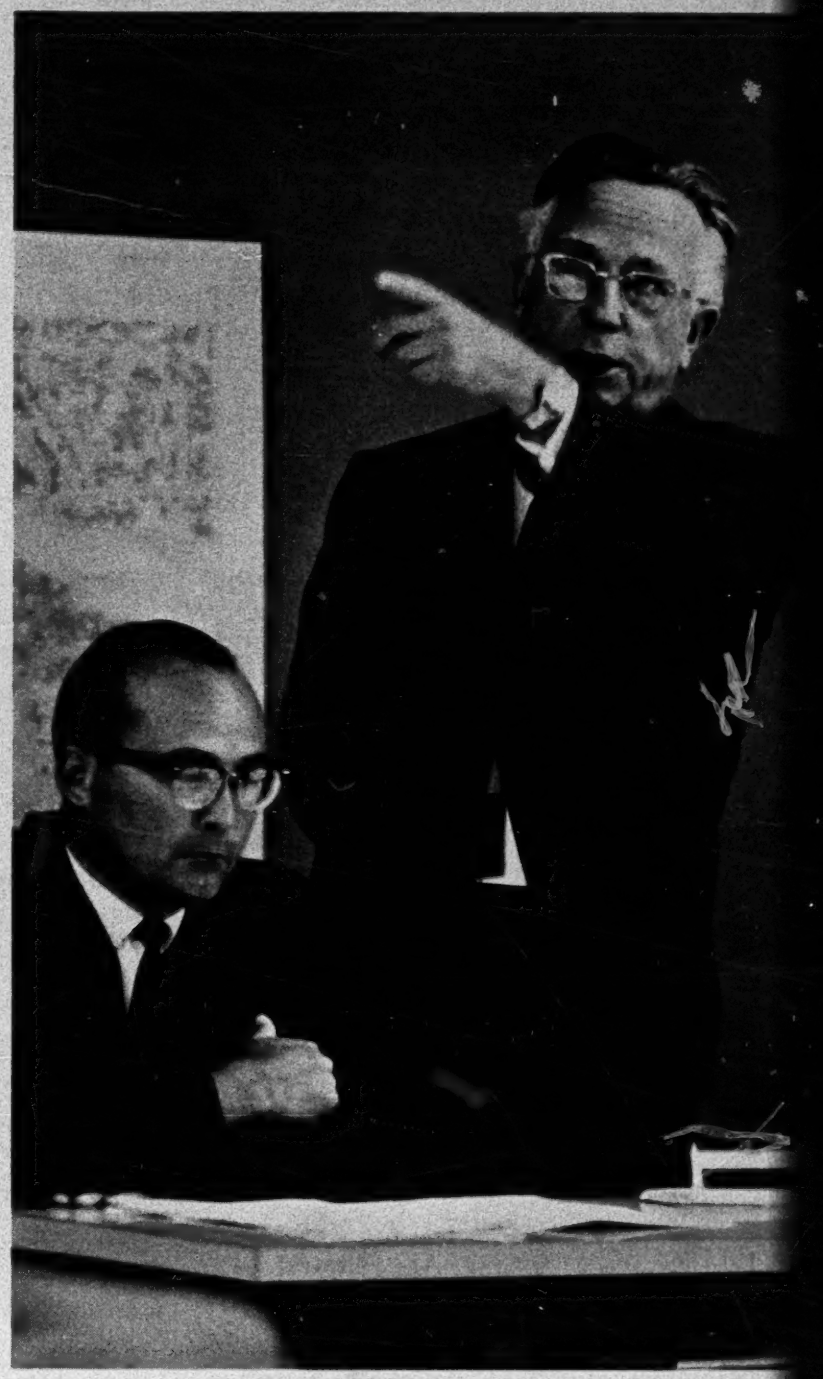
The Planner: Although the president is ultimately responsible for the final product, he should, again ideally, appoint several men shortly after taking office who can carry on the details of planning and construction. One such assistant is a person specifically charged with facilities planning. He will be the person who deals most frequently with the other members of the college staff and with architects, consultants, contractors, and suppliers. While the actual legal authority to make contracts may reside with the board, the planner is the person through whom all planning decisions and suggestions should flow. This is not to suggest that the board, other administrators, the faculty, and the outside contractors should not be a part of the planning process – indeed they should. The important point here is that in order for planning and construction to proceed effectively, it is vital that one person herein designated as the planner, should be continually aware of all existting plans and all proposed changes and suggestions and should be in a position to coordinate the many details involved.

Other Administrative Officers: Other officers of the administration should be appointed early. The other members of the president's initial administrative team should include, at least, the academic dean, the business manager, the librarian, and the dean of students. These administrators will be responsible for the development of the academic program, its financing, the necessary support services, and campus life. Since the planner must know the program before he can help design the facilities for it, it might even be argued – though somewhat facetiously – that he should be the last rather than the first team member appointed.

While the president and his five major administrative officers form the nucleus of the planning team for many two and four year colleges, the special needs of particular institutions will necessitate the early appointment of other officers. For example, if a college is to place a great deal of emphasis on testing for guidance and placement purposes, a director of testing might be a member of the original team, while if the college is planning to rely heavily on the newer media as an integral part of the instructional program, the administrator in charge of this area should be on hand to plan this program.

Faculty: If the budget permits, a few key members such as division chairmen should be added to the initial planning team. The recruitment of the teaching faculty should ideally start a year or more before instruction begins. While the major administrative officers will create a basic educational plan, a strong, well-rounded faculty (which cannot be recruited overnight) must translate these broad objectives into specific instructional programs. The programs, in turn, will call for specific educational facilities which may range from the traditional lecture room to an electronically operated individual study center or "wet" carrel. In planning these facilities, the faculty will probably want to consult with technical and financial experts.

Colleges which have waited until the last few weeks before their opening dates to hire faculty members (and occasionally even some other administrative officers) have found themselves unable to offer a full, carefully-determined program. In addition, they have experienced considerable foot-dragging and resentment among the lately-recruited faculty who did not have a hand in planning the program in which they were now expected to teach.



Resource Personnel and Organizations: While it may be presumed that these administrators and faculty members have had some relevant planning experience and considerable specialized knowledge, they can readily benefit from additional information and knowledge gleaned from a variety of sources.

Planners may be found in state departments of education who are not only knowledgeable and willing to assist, but also frequently aware of innovations in curriculum and facilities on a state-wide and national basis. Colleges of education sometimes maintain planning specialists who often are able to help.

There is usually a great deal of information available to planners from architects, engineers, lawyers, and financial experts. Many governmental agencies maintain useful records. Planning commissions (state, county, and city), utility boards, fire, police, highway, and health departments often maintain statistical projections, land use surveys, minimum standards, and improvement features for construction, etc. These data are necessary and useful when interpreted in terms of college goals and needs. Private businesses and organizations are also useful sources: realtors and their various professional organizations and boards, telephone and telegraph companies, public utilities, transportation services, and others can be most helpful in sharing their data and are often willing to lend their time and energy for consultation.

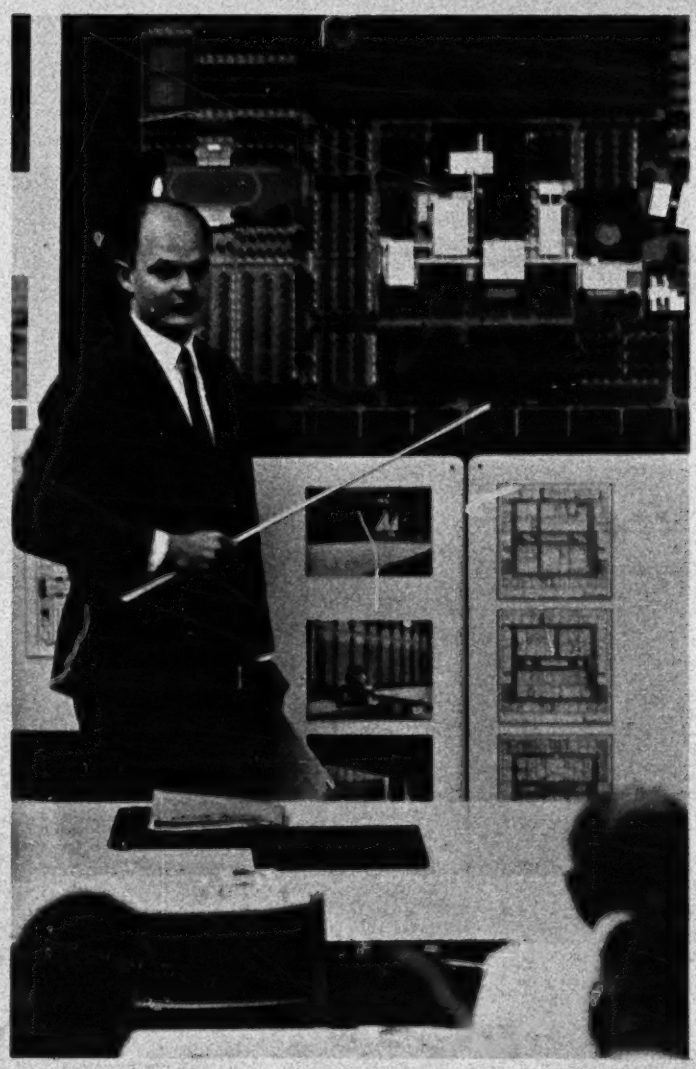
The Architect: Assuming that prior educational planning has gone well, the next logical step is the appointment of an architect. His work may generally be divided into four phases: schematic design, design development, contract document, and construction.

In the schematic design phase he serves as a consultant in preparing educational specifications in addition to preparing contractual and payment arrangements, clearing real estate legalities, coordinating public agencies, and directing an engineering survey of the campus site.

In the design development phase, the architect begins translating tentative schematic designs into a layout of the individual campus buildings. He also prepares a preliminary cost estimate.

The contract document phase includes the preparation and submission of the final drawings for the campus, contract specifications, and bidding information. Approval from all public agencies—fire marshal, health department, etc.—must also be obtained at this point.

In the construction phase, the architect prepares the documents necessary for the bidding process and administers the construction contract. He must continually inspect the plans and workmanship of subcontractors and make final certification of satisfactorily completed work.



THE MASTER PLAN AND RELATED DOCUMENTS

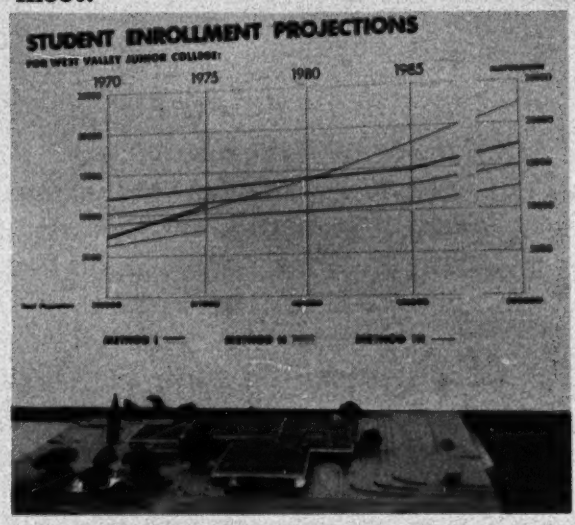
The Master Plan: The planning team should develop a master plan either with the cooperation of the architect or an educational consultant, or perhaps even before such persons are called upon.

The community college is, by definition, created to serve the community's educational needs. But in order to do so in an effective manner, it must be planned to change and to develop with the community. This is not to suggest that the college should follow all the whims and fancies which may be suggested from time to time. On the contrary, it is important that the college provide a sense of solidity and continuity to its community. In doing so, however, it must look to and try to anticipate the future just as it transmits the cultural wisdom of the past and present. If communities never changed, there would be no need for the master plan since this is a document dedicated to the future and the changes it will bring. The need of such a planning document for a rapidly growing area is evident, but it is also important for the community experiencing little or no growth. No American community is truly isolated today when transportation is readily available and when television brings new and different ideas directly into the home.

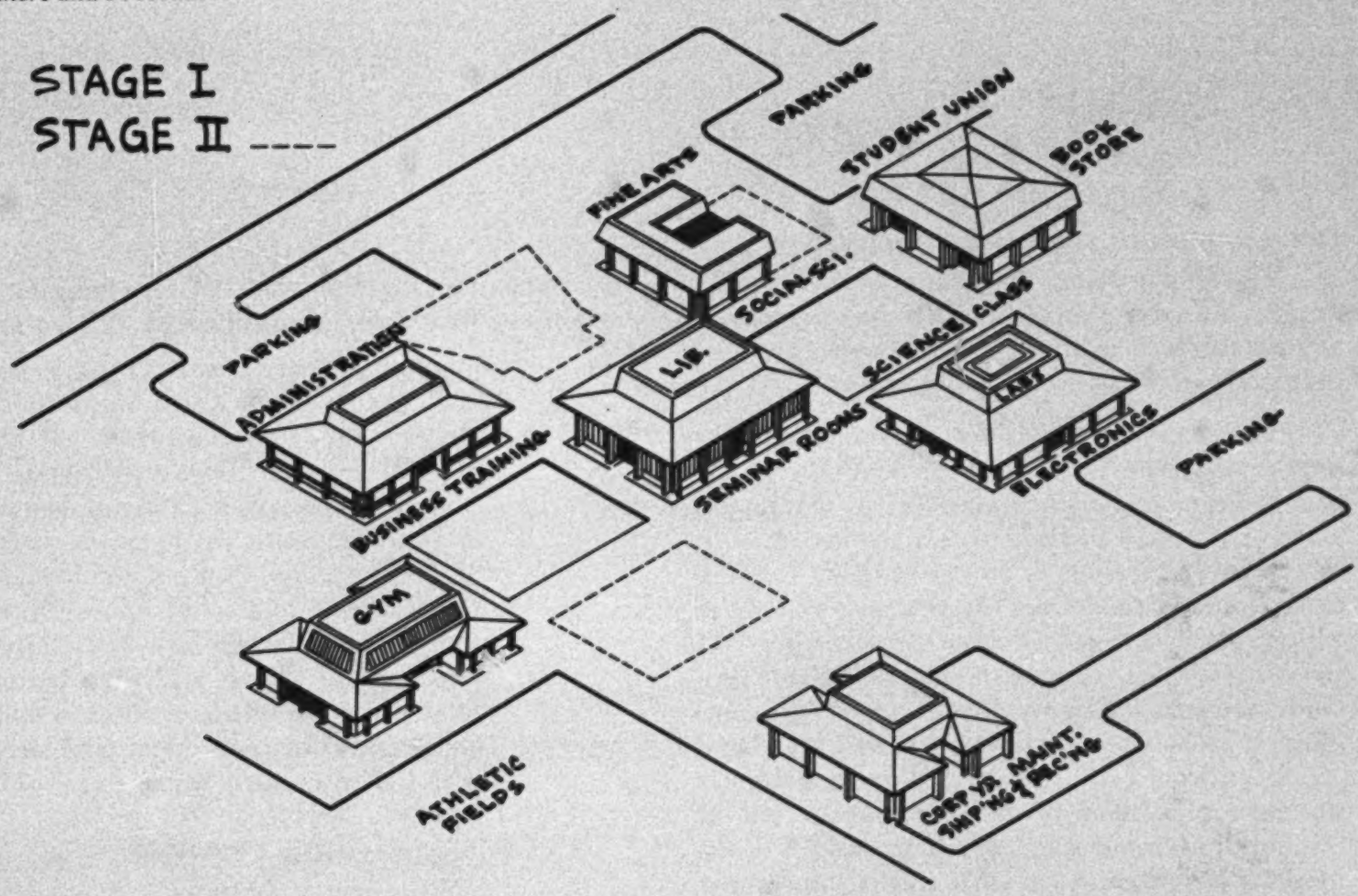
To coordinate the efforts of the planning team and to insure maximum efficiency and quality in the creation and operation of the college, a clear and comprehensive master plan is imperative. Though it will periodically undergo review and sometimes modification, the master plan must provide guidelines for both the immediate problems of building the college and for its long-term development. Without an authoritative yet flexible master plan, the coherent development of an effective community college – as some districts have discovered painfully – is all but impossible.

The main functions of a master plan may be separated into three basic divisions. These are:

1) Community Analysis and Projections.
A thorough and detailed evaluation of the economic and sociological patterns of the community and a projection of population growth both in number and direction must be made. Such factors as college population, general educational needs, and adult education requirements will then be extracted from this analysis. These will then be projected into the future in order to make an estimate of the educational needs which the college must eventually meet.



2) College Analysis and Projections.
Educational objectives, a specific curriculum, and a system of instructional programing are specified, along with the community analysis, to establish present and future site requirements and facility needs. Although not usually included under the master plan itself, the educational specifications and the campus design objectives (discussed below) are necessary adjuncts to this section. A careful assessment of the financial needs and resources of the district is also required here.



3) The Master Schedule.

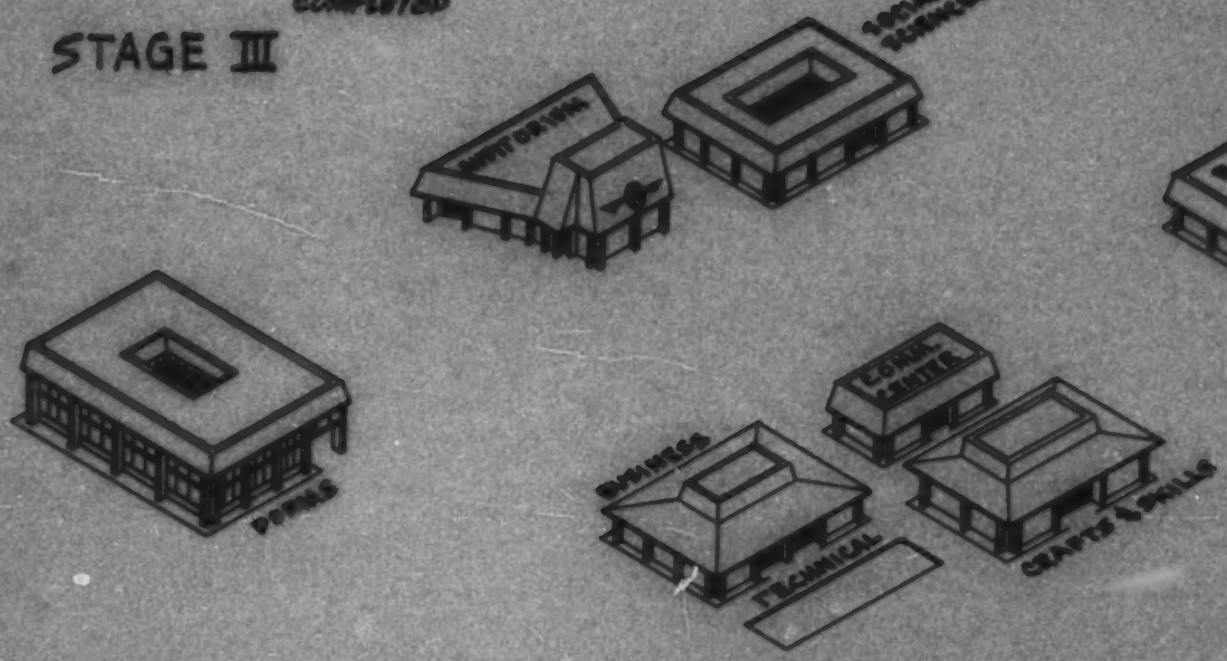
The master schedule should establish a firm sequential order for campus planning and construction, indicating which processes can be carried on concurrently and which must follow sequentially. It should assign time limitations and sequences for the acquisition of staff and for the accomplishment of their respective tasks, and it should set a desired opening date, noting the limits within which opening may be advanced or delayed. The master schedule should also delineate the major stages and operations involved in both short and long-term development, as directed by expected future needs and the resources available to meet them.

Other important planning documents are related to the master plan. Though they are not usually included *in toto* in the text of the master plan (this depends to a great extent upon the conclusions reached in these documents), they are broadly influenced by the aims of the master plan and are specifically provided for in the master schedule.[1]

Educational Specifications: The major substantive task of the educational specifications is to translate educational goals and ideas into an analysis of space and facility requirements. In the past, very elaborate "ed specs" have been drawn up, specifying the number, kind, and placement of buildings, the specifics of interior and exterior space and equipment, area relationships and interrelationships, traffic flow patterns, special facilities, and the like. Current practice, however,

[1]Readers wishing more detailed information on master planning and other school planning problems will want to read the two basic texts in the field: MacConnell, James D., *Planning for School Buildings*, Prentice-Hall, Inc., Englewood Cliffs, N. Y. 1957. Boles, Harold W., *Step by Step to Better School Facilities*, Holt, Rinehart and Winston, Inc., New York.

STAGE III COMPLETED

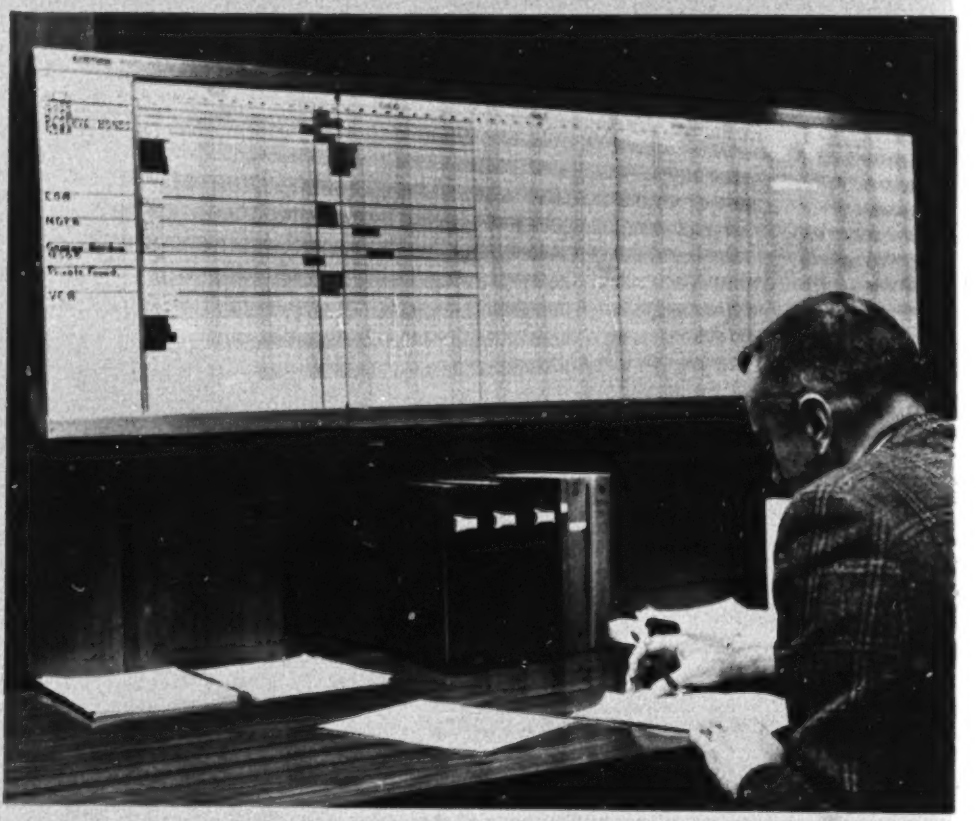


seems to be moving away from the lengthy, elaborately prepared specifications and toward a relatively brief document which will act as a guide to the architect while allowing him to perform in a creative manner in solving the specifics of campus design. But it is vital to the eventual effectiveness of the instructional program that the educational specifications be based upon the college's educational objectives.

This is a point worth considerable stress. It seems obvious that curriculum, instructional programming, and course offerings must flow from the college's basic objectives, and that such factors will, in turn, suggest or even prescribe specific facilities such as a large lecture hall, a language laboratory, or small seminar rooms. Unfortunately, educators all too often concern themselves first with facilities and later find that they are forced to tailor the curriculum to fit these physical spaces. As Churchill noted, once we have shaped our buildings "thereafter, they shape us." To build a planetarium, to locate a campus in the country rather than in the city (or vice versa), or to devote a considerable portion of the budget to instructional television may be wise or foolish depending upon the college's educational objectives and needs.

Such considerations cannot be made in a vacuum. While it is of value to involve the faculty in master planning, as has been mentioned, experience shows that broad scale faculty participation at the educational specifications stage is of paramount importance for both educational and practical reasons. While the president and his administration will of necessity take a broad view of the total educational program of the college, the individual faculty members will have to teach in and "live with" the facilities which result from the educational specifications. The administration will very probably be forced to modify – and usually curtail – certain faculty recommendations for reasons of limited finances or curricular balance. But with prior faculty consultation, such modifications may be made in a manner which is educationally sound and which elicits a greater degree of faculty cooperation.

Planning and Construction Schedules: As a supplement to the provisions for planning and construction in the master schedule, the planner should develop specific and detailed schedules to aid in coordinating the planning team's efforts on a week-to-week basis. These schedules should delineate the specific steps involved in each phase outlined by the master schedule and should clearly assign responsibilities for each step. Few community colleges can proceed with planning and construction at a leisurely pace – many have been given as little as six months to open their doors. Whatever amount of time is allotted, it will probably be less than the planning team would wish. In order that the time be used with utmost economy, scupulous scheduling should be a major consideration.



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SELECTION OF THE CAMPUS SITE

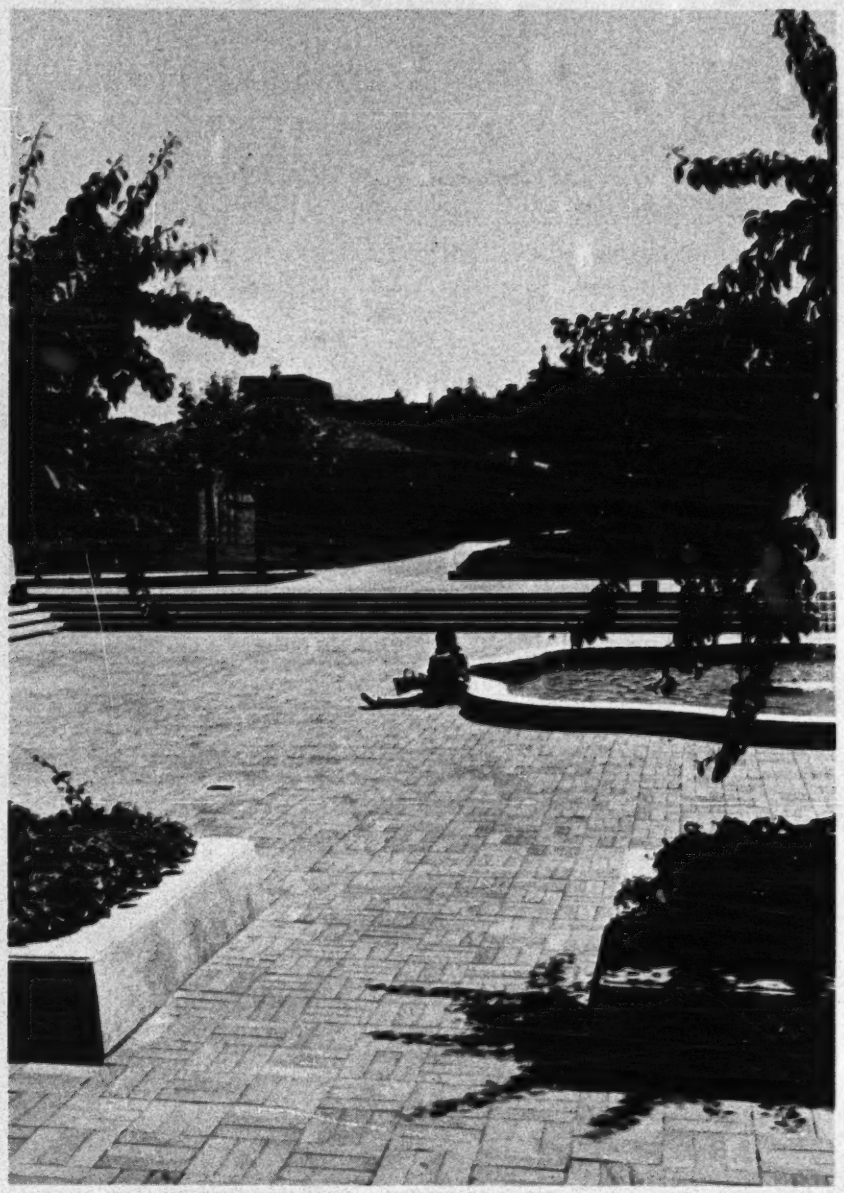
Ideally, the master plan and the educational specifications should be completed before the board and planning team turn their attention to the specifics of campus location. While this does not guarantee success, it does allow the planners to focus more closely on educational concerns alone rather than to divide their attention between basic educational decisions and matters of building placement, drainage, cost, and an unimaginable number of other problems which invariably crop up when the details of building are contemplated. But even more detrimental to the educational program than the divided attention of the planners is the potential for undesirable change in the educational program due to non-educational considerations. Thus, a particular site, if selected before the educational program has been fully planned, may modify or curtail that program before it is "off the drawing boards." Understandably, there may well have to be some compromises between the ideal educational program and the actualities of a physical site. But here, a warning is in order. At least one college has found itself in great difficulty when, after completing its master plan and educational specifications, it decided to locate the campus in an area which precluded effective implementation of its plans. Nevertheless, a fully developed program stands a much better chance of effective implementation than one which fails to detail both the present and future needs of each part of the total educational program.

However, as has already been mentioned, the time factor will seldom allow the planners the time they would wish and it is entirely likely that the development of the educational program and the selection of the campus site will overlap or even occur simultaneously. This makes it all the more important for planners to be on their guard against allowing physical considerations to dictate educational policy.

The location of a permanent campus – and perhaps a temporary interim campus – brings a number of vital issues to bear. The most important and overriding consideration should be the adequacy of the particular site in relation to the needs of the college as expressed in its master plan, educational specifications, and design objectives. Unfortunately, however, other factors tend to intrude.

Local landowners generally, though certainly not always, feel that colleges enhance the value of the surrounding land and thus may offer the college a large parcel of land as a gift. While a planning team would certainly be derelict in its duty if it ignored such an offer, it would be equally derelict if it accepted without further study. Site accessibility, cost of improvements, cost of utilities, cost of additional land, and regional sensitivities are only some of the considerations which should temper the college's decision.

For example, an offer of fifty acres either free of charge or at nominal cost might seem to be simply too good to turn down. But if the planning team is looking for a campus site with a minimum of 100 acres as currently recommended by the State of California's Department of Education for that state's junior colleges, or if it feels, as do a number of colleges, that 125 acres is a more realistic minimum, then it would need to



investigate the cost and availability of the land surrounding the site in question. It might possibly turn out that by building on the fifty acre site, the college would commit itself either to an inadequate site for many years to come, to the purchase of high cost properties bordering the original site, or to the substantial cost of high rise construction.

The proximity of the campus to population centers is also a matter of concern. There is a strong temptation to seek a site away from built-up areas, for reasons of cost or aesthetics. But this should be balanced against the question of where a college can best serve the largest number of students within its district. The decision might well be made to locate in older downtown buildings where land is costly, but where the college will be of greater service to the many city children, rather than to locate a new campus on inexpensive land outside the city. On the other hand, the college's master plan projection may reveal that the center of population is shifting away from the older, downtown area and towards the suburbs. In such a case the college might decide to place its main campus in the suburbs and to maintain a downtown center to serve the students who, for financial or employment reasons, may not be able afford either the time or the expense of commuting to the outskirts of the city. Or, as in New York's case, the reverse might be done. The main campus could be placed downtown in the heaviest area of student population and branch campuses could be located in the suburbs to serve the student population there.[1]

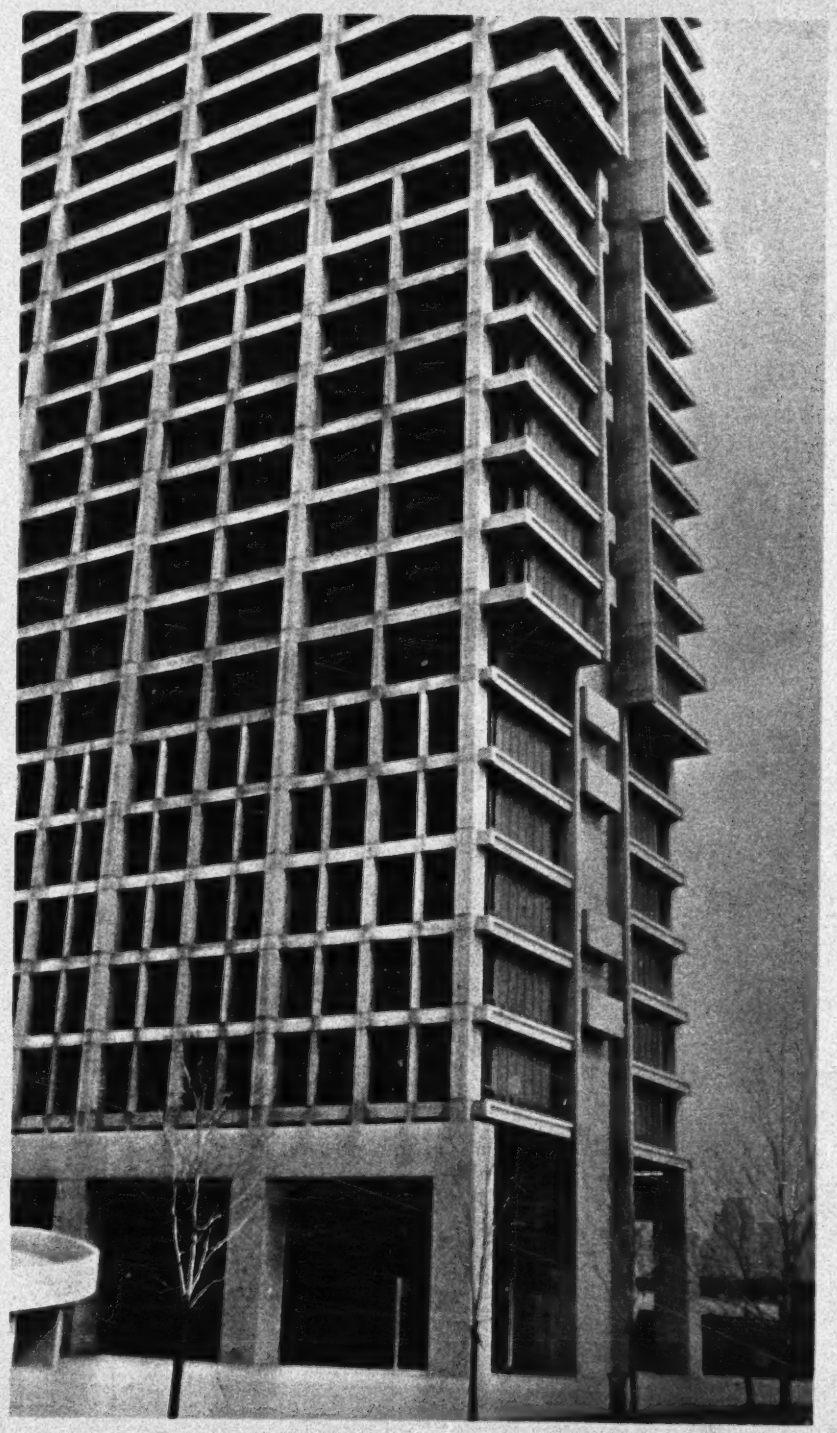
Recently, the availability of urban renewal funds has made city locations more feasible. These funds can help reduce the cost of land clearance, of meeting stringent city building codes, and of expensive high-rise construction which characterizes an urban college.

Political sensitivities may also become involved. If a district includes two or more centers of population, a delicate question may arise as

to where the campus will eventually be located. Placing the campus in one center may result in loss of support from the other, while placing it halfway between may satisfy neither and can even render the college partially ineffective because of the travel and time constraints placed upon students.

Although no hard and fast rules may be given for such problems, a general guideline is that the community college should generally be located as close to the largest center of potential student population as is consonant with the campus space and program requirements. While this may seem self-evident, it is not always followed. Cost factors, for instance, may seem so overwhelming that board members or planners may decide to build on a decidedly undesirable location because they feel that a higher cost site may be wasteful or even unattainable. While they may be right, they may not have considered the true long-term cost of land in terms of maintenance, expansion, and servicing. Because of such factors, land with a low initial cost, like a bargain-basement automobile tire, may prove to be the most expensive in the long run.

A second guideline is to investigate a number of potential sites before making a final decision on any one. Each site should be rated on factors such as size, cost, topography, and potential hazards.[2] Such a rating may then form the basis of recommendations to the board of trustees for the actual purchase of land.



[1]Questions such as these are discussed at some length in two publications, available without charge: *To Build or not to Build: A Report on the Utilization and Planning of Instructional Facilities in Small Colleges,* Educational Facilities Laboratories, 477 Madison Avenue, New York, N.Y. 10022. *Community Colleges in Urban Settings,* Community College Planning Center, School of Education, Stanford University, Stanford, California 94305.

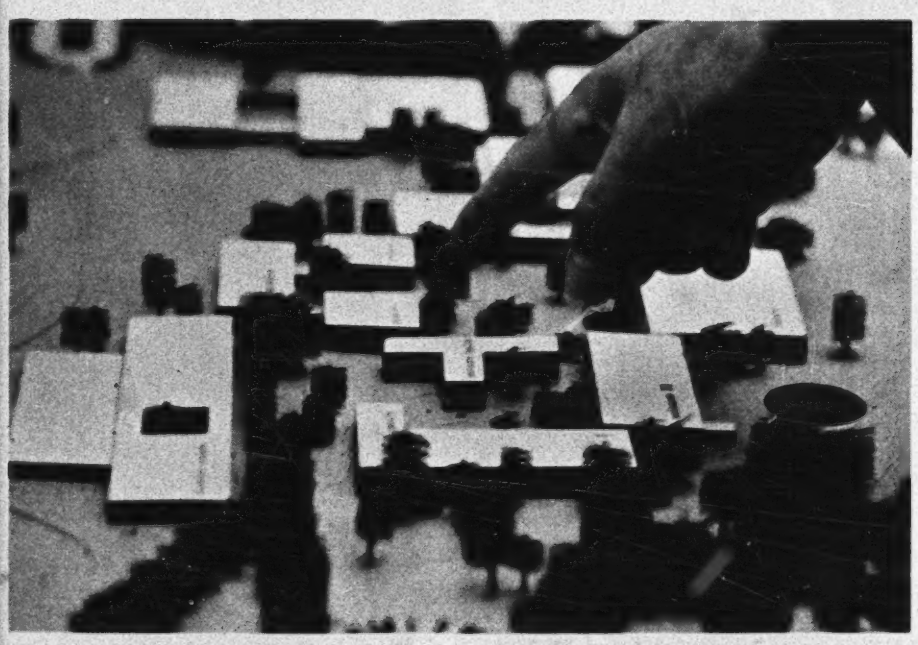
[2]The Schneider Site Characteristic and Analysis Sheet may be used for this purpose. It is fully described in Schneider, Wilsey, and SPL Staff, SPL Research Report #5, *School Site Selection – A Guide,* available for $1.50 from the School Planning Lab, School of Education, Stanford University, Stanford, California 94305.

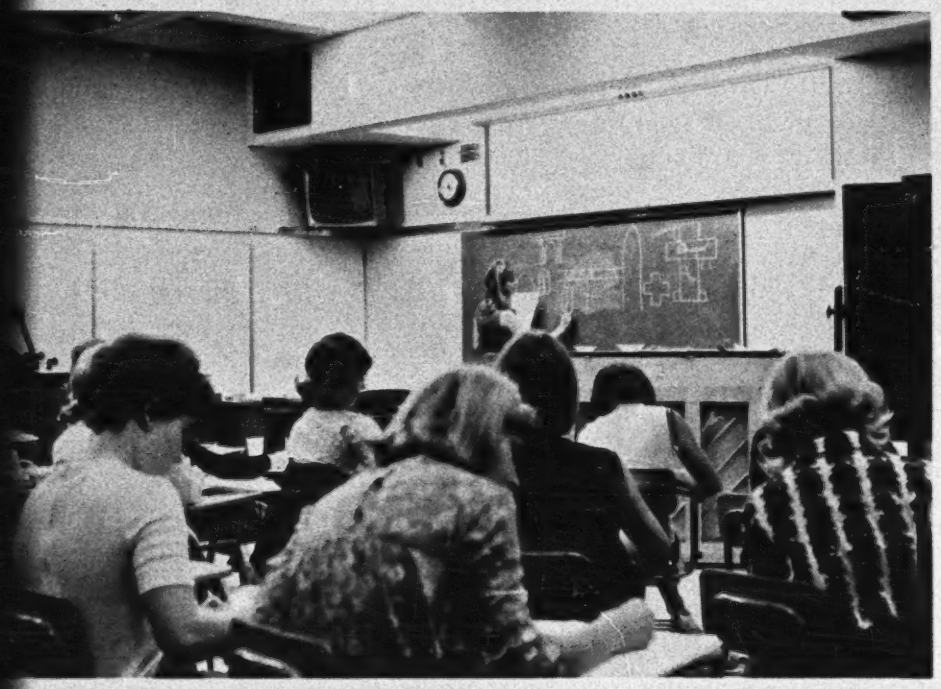
THE "CORE CAMPUS": BASIC COMPONENTS

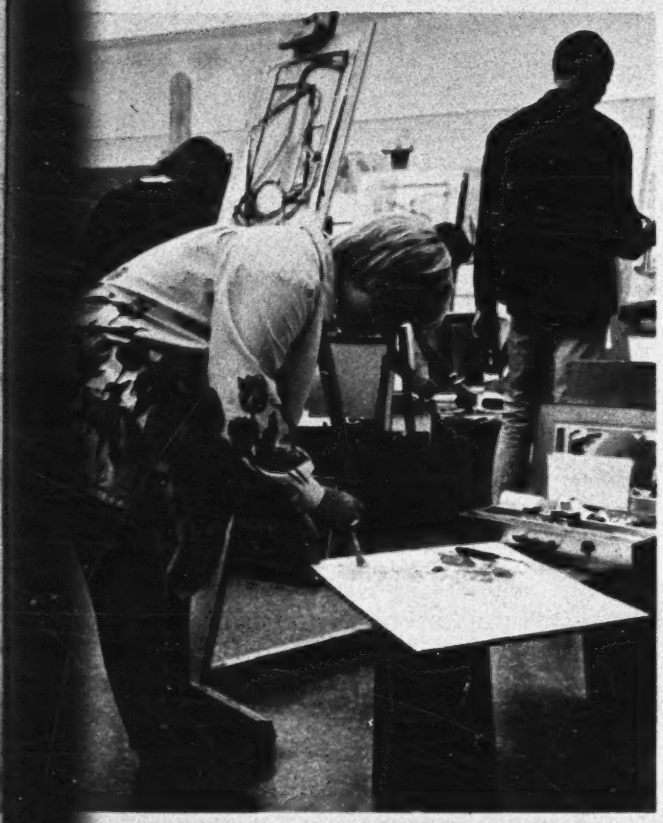
When the die is finally cast and a site has been selected, planning of the core campus should begin. Just as the multiple functions of the individual community college are planned to harmonize into an essential whole, so also from the innumerable possible forms and styles of campus arrangement there should emerge a reasonably constant set of basic elements essential to the very nature of the community college. Some of the elements of this "core campus" are derived from the functional commitments of the community college as an educational institution. Others arise from the need for the campus to be able to respond effectively to the changing nature of its community, its student population, the educational process, and the unknown demands of the future.

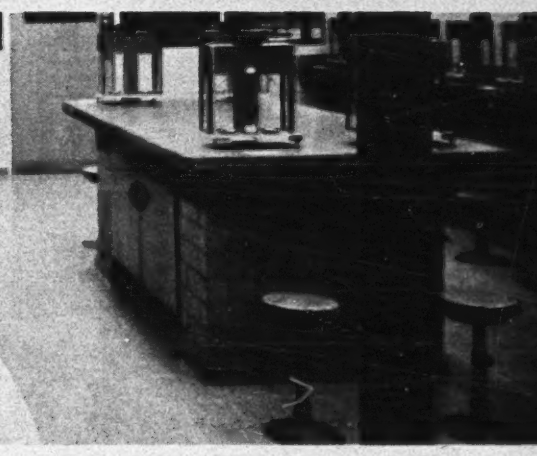
Although the facilities components of colleges may and do gradually change, and though new components such as a learning resources center will be created, the major components of the "core campus" derive from the community college's basic functions and are so sufficiently constant that they should be included in planning for any new campus.

Instructional Facilities: Although there are effective collegiate institutions which do not reflect any consistent character in their building, a strong case can be made for an attempt to include several general qualities and capabilities in the physical structure of the community college. The basic instructional areas (classrooms, laboratories, shops, study spaces, faculty offices, etc.) and the service facilities related to them are certain to vary with time and according to the institution. But they should relate to the needs of a particular college at a particular time. Thus, a residential college might curtail space designed exclusively for study, but a commuting college ought to provide more of it. The spaces devoted to instruction should be determined or at least conditioned, by changing educational emphases. Currently, three trends stand out which should be considered: 1) greater reliance on individual study, 2) greater use of mechanical and electronic aids to instruction, and 3) greater mixing of laboratory, classroom, and study activities. Such trends clearly suggest that more self-study alcoves, more seminar rooms, and classrooms that may change in type and size between classes are needed.





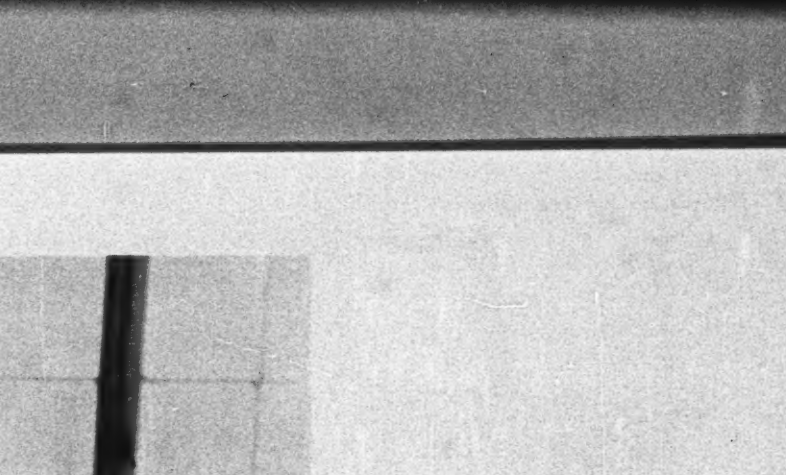


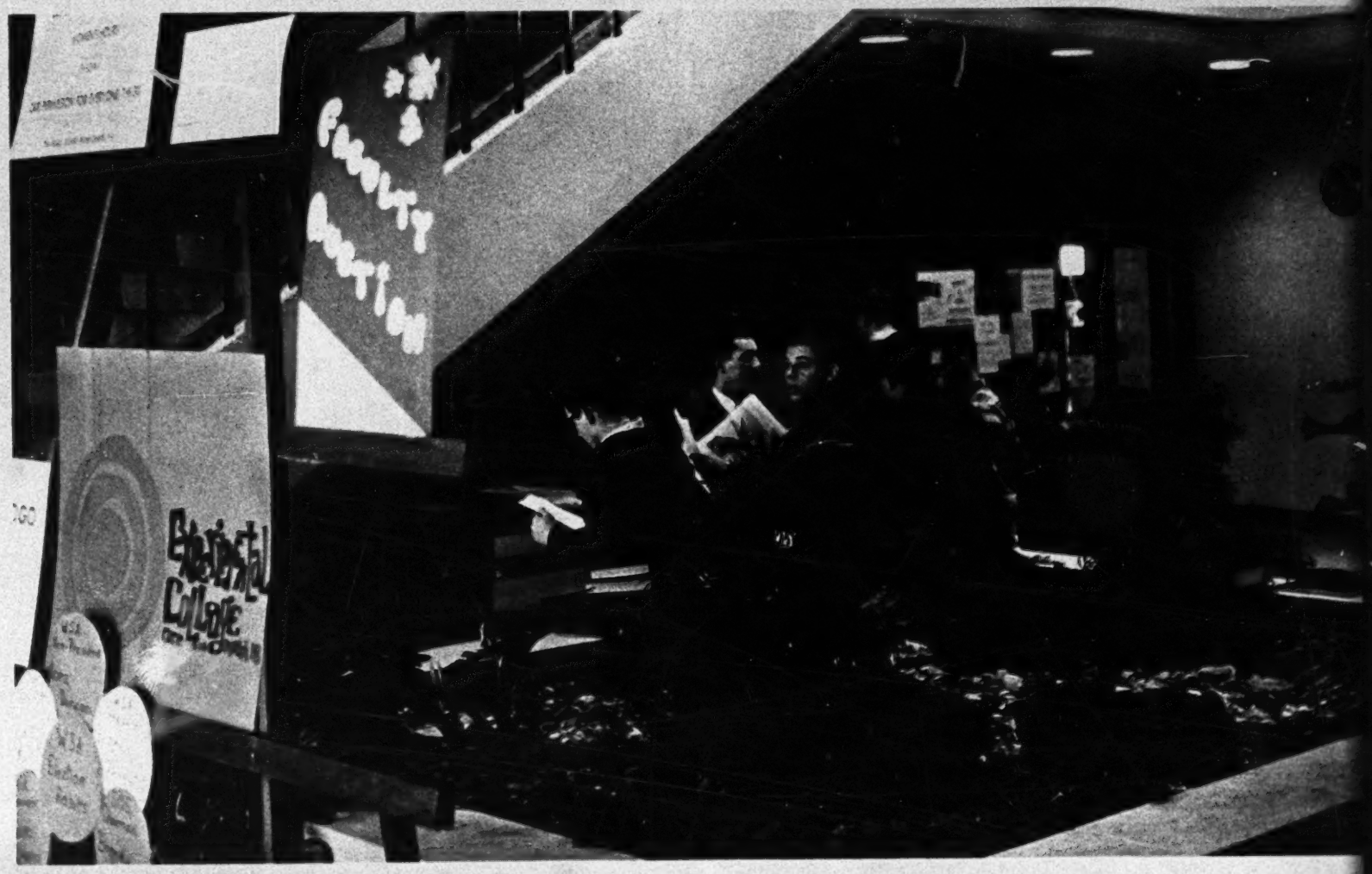


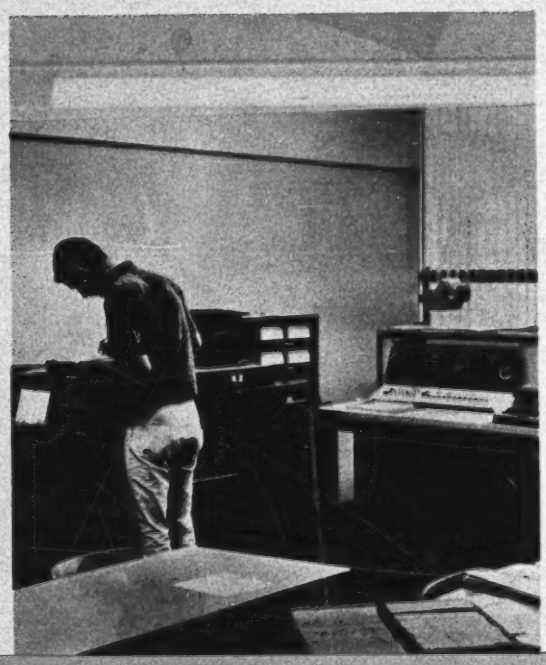
Libraries and Museums: Historically, books have been at the center of American colleges. Many a college in the colonial era began with a collection of books as its only endowment, and the ideal still persists that the library should be the hub from which radiate the spokes of classwork, study, and extra-curricular activities. The greatest single educational revolution in American colleges in the present century lies not in the use of television, radio, language laboratories, or teaching machines, but rather in the relatively new idea that the books in the library should be open for use by students and faculty alike. The dimensions of this revolution have been expanding enormously as they are extended to include records, films, paintings, tapes, and all the other documents now lodged in a college library. The shift away from a purely archival function to a utilitarian one has resulted in the open stack system for bringing people and materials together; this, in turn, has demanded great flexibility within the library building.

In its role as a local cultural center, the community college has both an opportunity and an obligation to carry this revolution of accessibility even further. The documents and artifacts held in cultural repositories on the community college campus should be readily available, not only to students and faculty, but to the entire community as well. Local museums, private art collections, and the full range of cultural items from folk costumes to rare books can receive proper care and yet be accessible when housed on the campus of the community college.

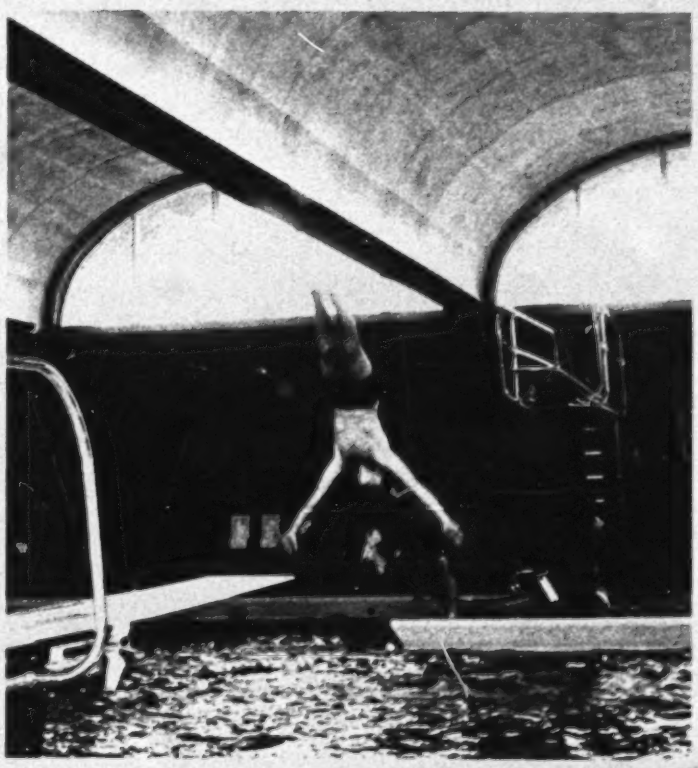
Centers for Extra-curricular Life: American institutions of higher education have long emphasized out-of-class life and have often made physical provisions for such activities. Chapels, lodges for debating societies, and fraternity houses have in the past received the same concern which is presently reflected in campus unions, faculty clubs, auditoriums, and theatres. Indeed, so strong is the American faith in out-of-class educational potential that one university president placed formal classrooms at the bottom of the list of facilities needed for an effective college. For commuting colleges, such things as student unions appear to be even more essential than for residential campuses. As Henry L. Stimson noted, the most valuable lessons – the lessons that influence our lives – are "not those learned in the classroom – but on the campus in close fellowship . . . with our friends." Conversation in the student union replaces the all-night bull session in the dormitory; it is over a cup of coffee that students can debate and assimilate the ideas and insights gained in the classrooms.







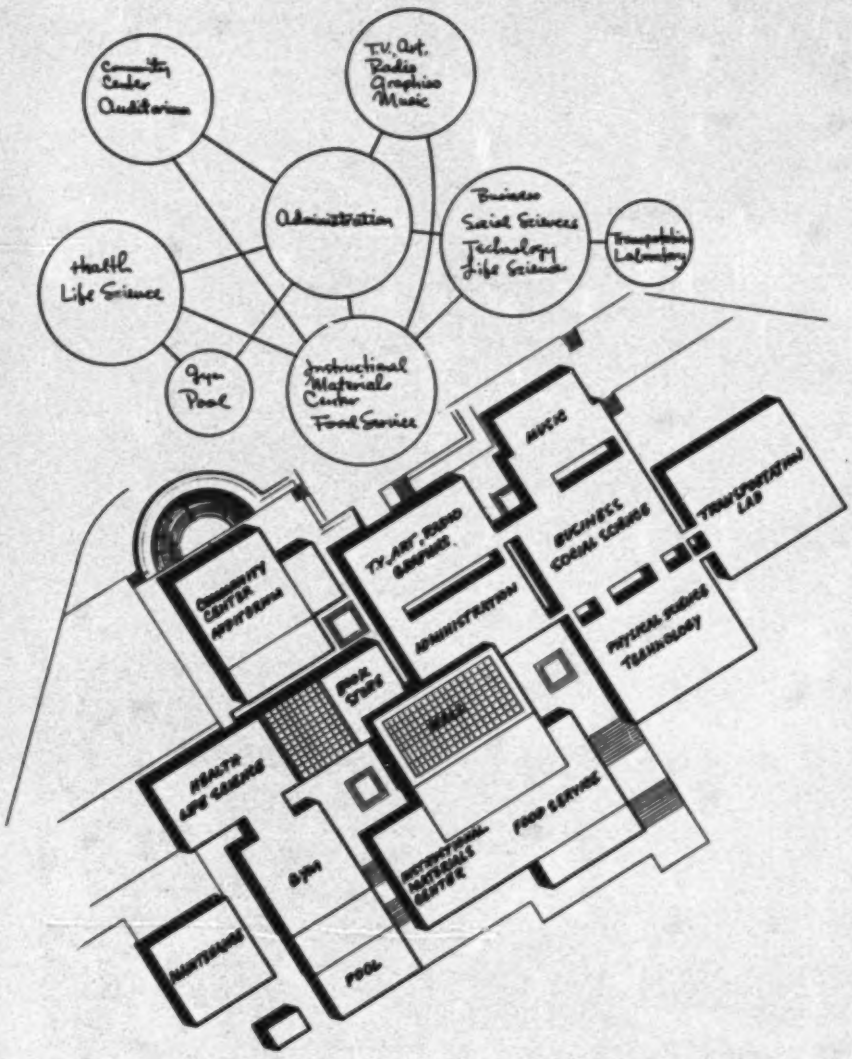
Institutional Services: Colleges exist to serve people, and people have a variety of needs which must be met even while engaging in an essentially educational activity. The institution, too, has extra-educational needs which must be serviced if the college is to continue to function and grow. Student services, including student activities, loan and scholarship programs, counseling, health services, and cafeteria facilities all help to serve the peripheral but important human needs of the community college poulation. General administration, financial operations, physical plant operations, development and planning, public information, campus publications, and many other services are necessary to the operation and growth of the community college as an institution. As the nature of collegiate education becomes more complex, the size and range of institutional services continue to increase as do the demands they place upon space, monetary resources, and personnel. The end of such growth and complexity is nowhere in sight.



Sports, Recreation, and Physical Education: These facilities, which demand a heavy commitment of space, house at least five distinct functions: 1) physical education and hygiene, 2) intramural sports, 3) intercollegiate athletics, 4) informal recreation and sports, and 5) instructional courses to prepare workers in the health and recreational fields. They take the form of swimming pools and related facilities, gymnasiums, stadiums, and field spaces. The community college which takes seriously its role as a community center may want to make such facilities available in sufficient size and number so that members of the entire community as well as students can use them. However, a junior college can be effective without these facilities. They are expensive, and their construction may detract from other more essential facility needs.

Housing: Although not of immediate concern to most community colleges, the capital outlay represented by housing is the largest single expenditure of funds the residence college makes. Higher educational institutions originally assumed that students would be responsible for their own living arrangements, but gradually, to bring living and learning into greater harmony, colleges and universities entered the residence hall field. At present, community colleges frequently avoid building residence halls on the theory that students can ill afford to live in them. Some theorists, however, have suggested that as transportation becomes more costly in huge urban areas, community college housing may prove to be less expensive for many students than driving to and from school one or more times each day.[1]

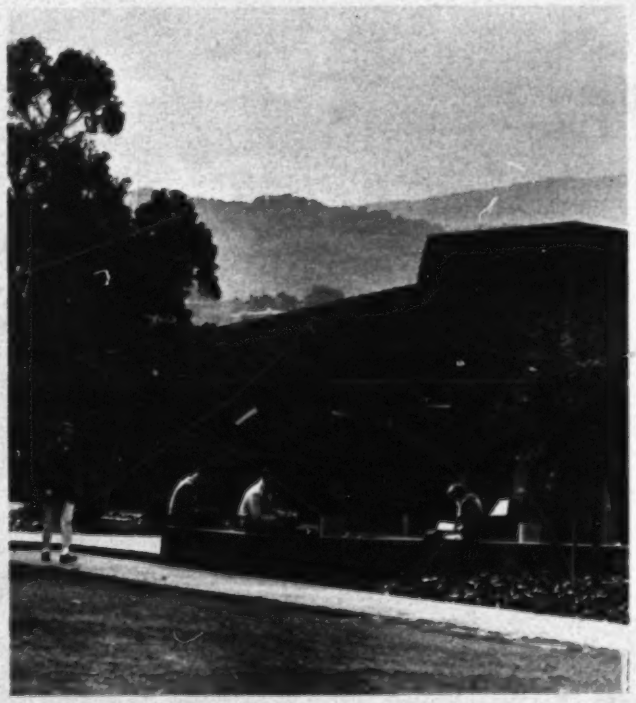
[1]Harold C. Riker and Frank G. Lopez, *College Students Live Here; A Study of College Housing,* Educational Facilities Laboratories, Inc., New York, 1961.



In addition to the basic facilities components derived from its educational and other functional commitments, the core campus includes certain general qualities and capabilities which must be built into the physical structure of the community college.

Integrity and Unity: A campus is more than a mere collection of buildings; its total design and architecture should express an integrity of function on several levels. The arrangement of the various facilities in relation to one another, if established without careful consideration, may create an atmosphere as definite in its disorder as the smooth coordination of a campus whose buildings and spaces are carefully planned to express a unity of educational purpose. One of the simplest yet most easily overlooked means of enhancing the cooperation of the fields of human knowledge, the efficient operation of the college, and the students' acquisition of a truly integrated general education lies in the campus planner's opportunity to reflect such abstract relationships as science to art or electronics to music by placing their respective facilities in harmonious physical relationships on the campus.

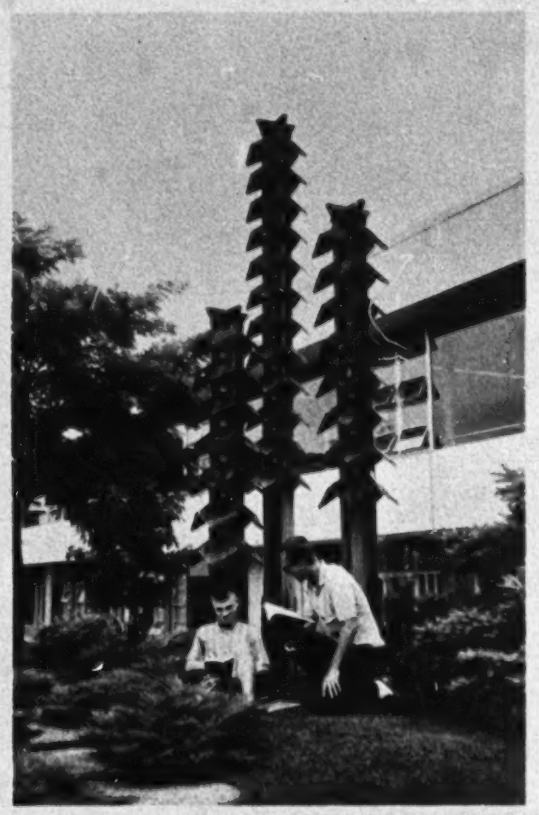
The human scale should also be an important determinant of campus design. Where transitions from interior to exterior space are easy and con-

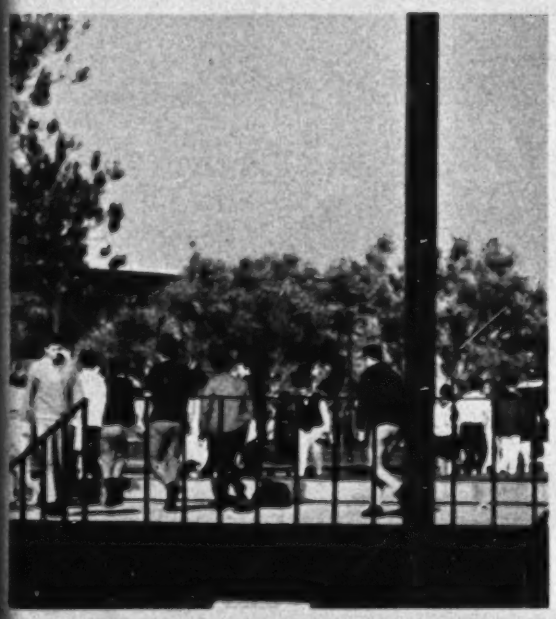


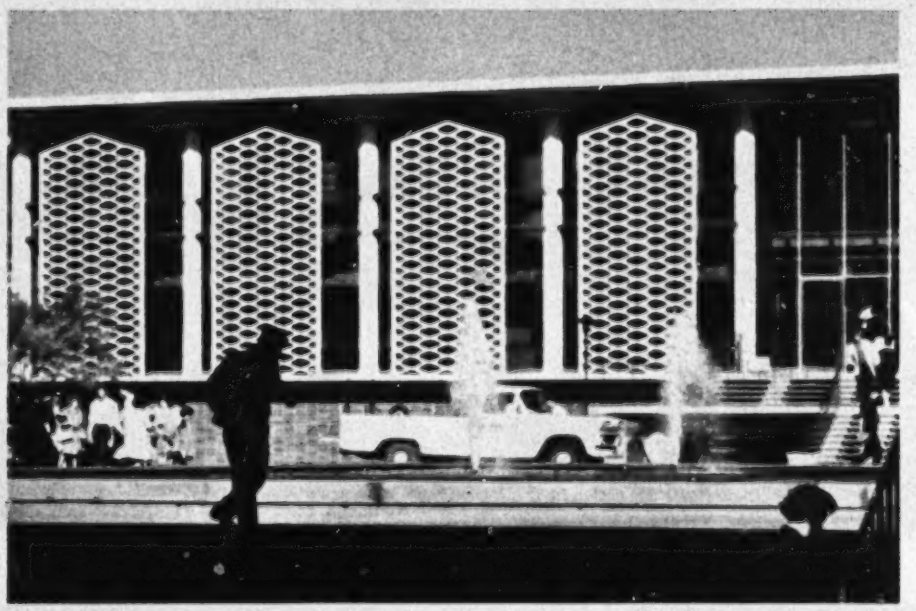
tinuous, where an efficient but relaxed flow of foot traffic is encouraged, where buildings and landscapes are designed to comfortably accommodate the human beings of the college population, a rich and lively atmosphere of informal communication and interaction among students, faculty, and the public may enhance the formal functions of the college. Where the human scale is ignored and buildings are forbidding or where landscapes are austere and resting places absent, the population of the college may become isolated, tense, and fragmented.[1]

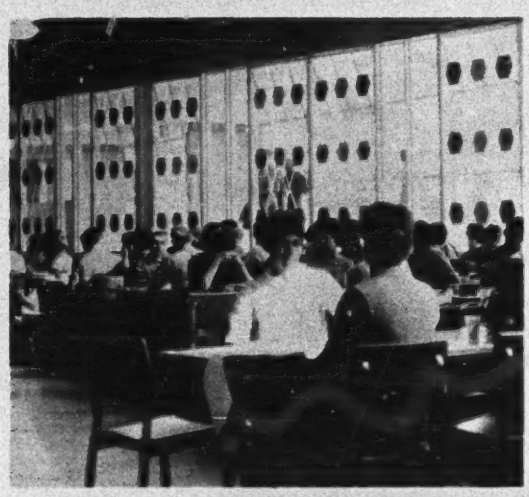
Finally, the architectural integration of the campus can be greatly enhanced by the use of a carefully selected symbol or motif. A dominant structure such as a campanile, a single outstanding building, a pervasive architectural theme from a repeated geometrical shape, or the consistent use of exposed aggregate or redwood timbers, extracts a unity and harmony from the complex of physical facilities and lends much to the feeling that the college is a coherent and purposeful institution.

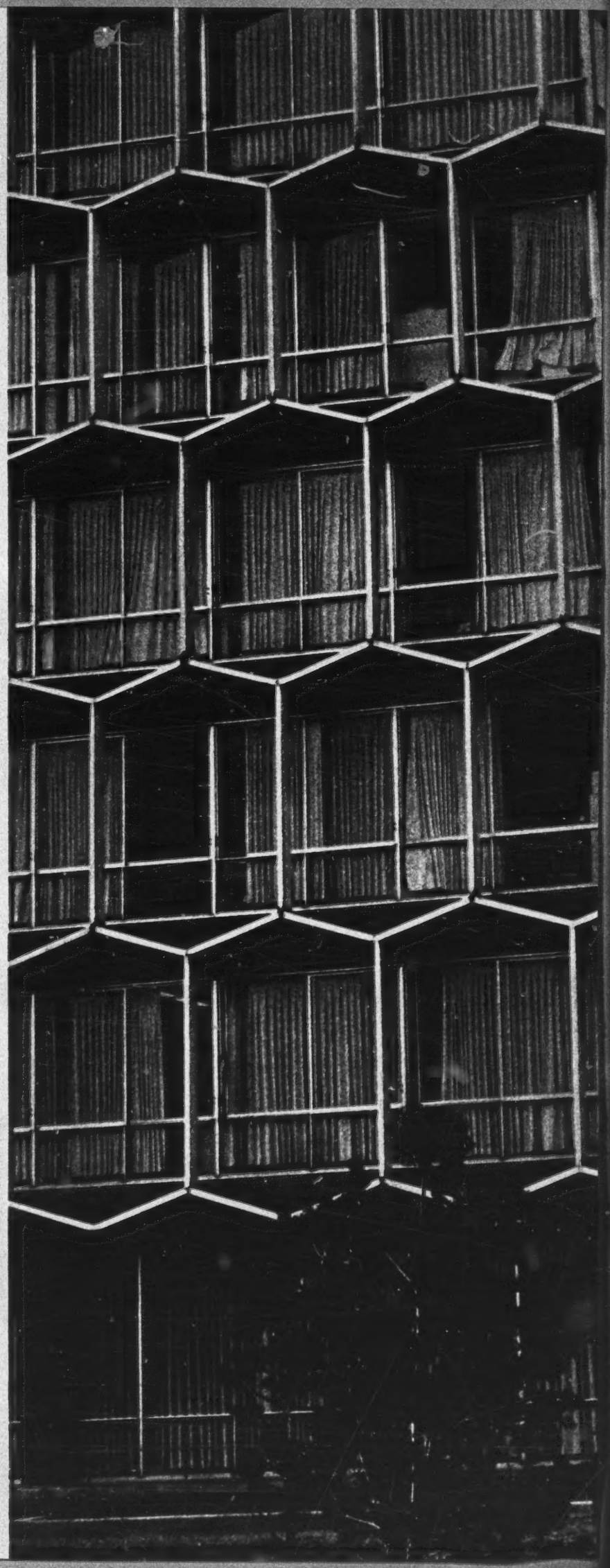
[1]*A Window to the Future* gives a report of the 1964 Airborne Institute for Community College Planning. This publication pictures many outstanding community college facilities and is available, without charge, from the School Planning Laboratory, School of Education, Stanford University, Stanford, California 94305.







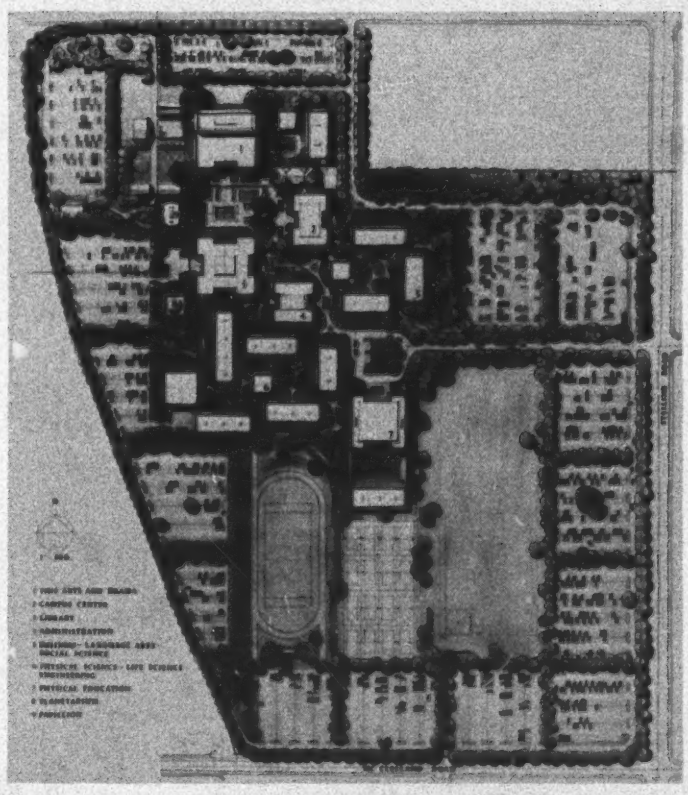




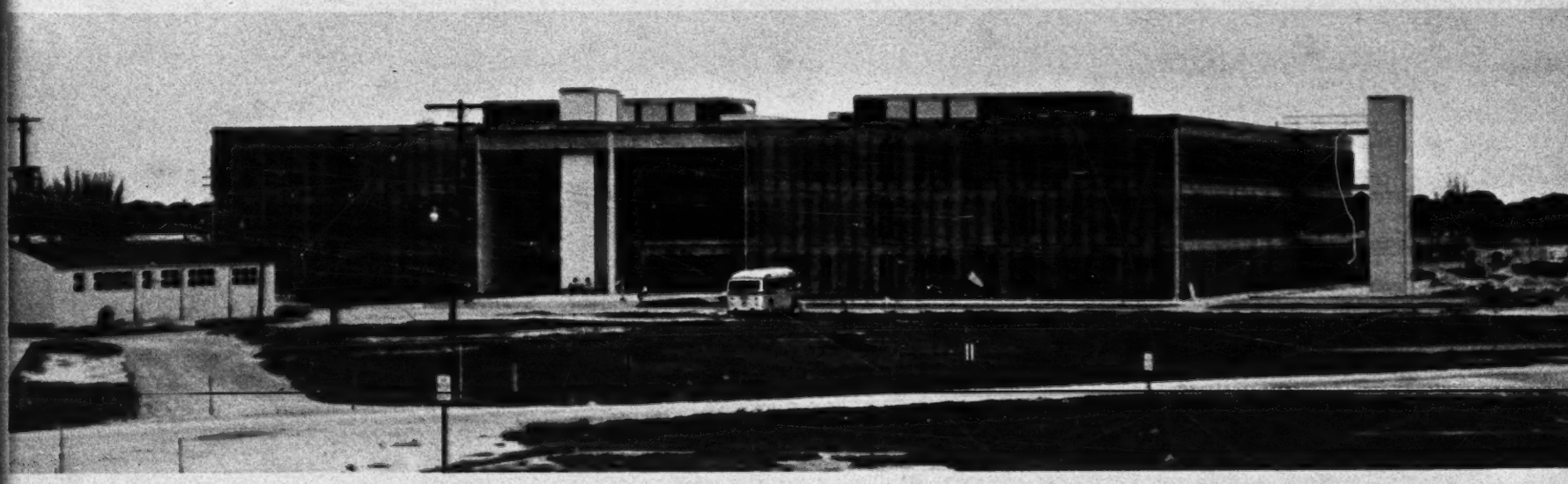
At Illinois Teachers College Chicago-North, for example, the recurrent unifying theme of the hexagon has been used throughout campus in classrooms, offices, cafeteria, gymnasium, and is even carried over to be used in the building facade.

Physical Relation to the Community: The community college, by its very nature, cannot present itself as a walled retreat standing apart in isolated grandeur from the supporting community. A community college campus is the symbol of a community's belief in education as a sustaining force in democratic life; it is an expression of the community's aspirations, and is a center not only of education, but of the community's cultural and recreational life. As has been mentioned, the location of the campus should be painstakingly and thoughtfully selected in terms of accessibility, community growth, and the symbolic role which the campus plays within the total community. The architectural atmosphere should relate to the specific physical and social environment the community provides rather than to Renaissance Florence or medieval London. A drab, depressing campus will do little to sustain the community's faith in its own future, while a campus so radically experimental that it is confusing may alienate the majority of the local citizenry.

Campus Growth and Flexibility: With the influx of millions of students into higher education, even the most careful estimates of future student population are often outdated before the first foundation of a new campus is laid. Thus, one of the basic decisions which must be made in planning a community college is whether or not the campus is to grow past a predetermined limit. Some planners have concluded that it is better to hold the campus to a certain size and to establish new campuses to handle growth and change. But many districts, because of population trends, lack or high cost of land, or other economic considerations, are not in a position to make this decision.

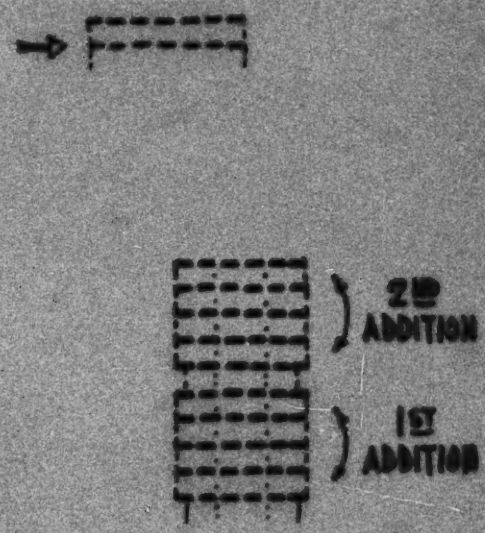


Planners in such districts can consider only a single campus location and must plan so that it can accommodate both expected and unexpected future changes. In these situations, imagination sets the sole limit on campus size. While Deep Springs College, for example, may make use of the thousands of acres in an entire desert valley as its campus, Brooklyn College is planning for the day just four years hence when it will house 30,000 students on only 26 urban acres.



In structuring the campus master plan for growth and flexibility, first attention should be given to the core campus, with room provided for expansion in many directions. These facilities may later be enlarged or modified as changes occur in one area or on a campus-wide basis. Thus, all existing buildings may continue to function without having to be torn down to make room for new facilities. A first-built administration building, for example, might initially house classrooms, a library, or even a cafeteria, and continue to be fully utilized while the subsequent facilities are constructed.

Rapidly growing Los Angeles City College has worked out such a campus-wide plan in which the various functions and programs are actually scheduled — for some years in advance — to be moved from one physical area to another as they and the college grow. While this may mean a certain amount of dislocation, it should insure the maximum of efficient and effective utilization of plant and the taxpayer's dollar.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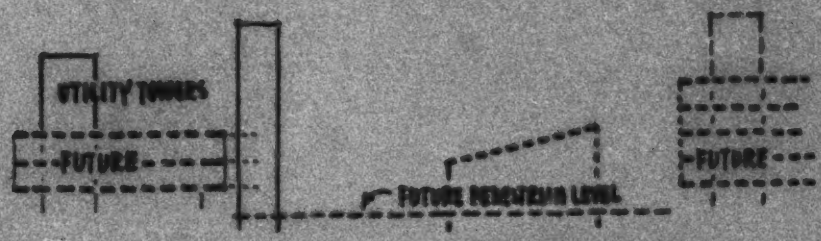
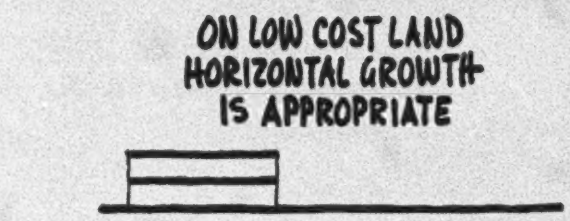

UTILITY TOWERS
FUTURE
FUTURE PEDESTRIAN LEVEL
FUTURE

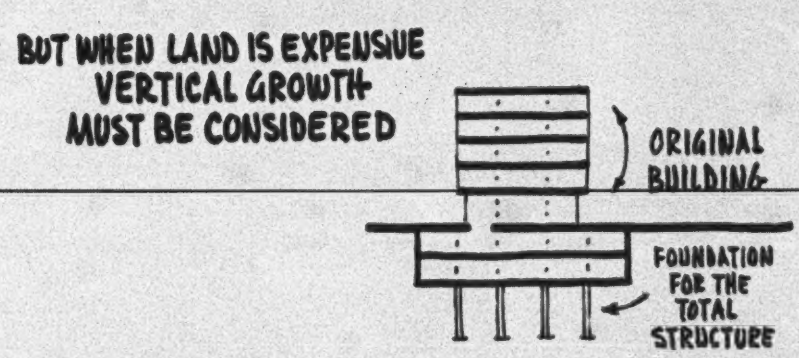
Building Growth and Flexibility: As total campuses should be planned to allow for possible growth in all directions, so should buildings be constructed for ultimate enlargement and maximum versatility. Potential growth areas to the side or sides of a building may be planned at little or no additional cost, and while in reserve, they may be left vacant or used for decorative plantings. (It is generally *not* advisable to use such currently vacant areas for any "semi-permanent" structures such as surplus military buildings, since these have a marked tendency to gain in permanency as the years pass.)

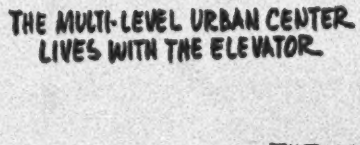
If, for reasons of land scarcity, value, and the like, it is not feasible to leave land unused, the possibilities of vertical expansion should be considered. In this case, it would be wise to plan the building foundations so that they may sustain additional stories. This may add a relatively small increment of cost at the time of construction, but it will certainly pay for itself many times over when vertical expansion is undertaken. The possibilities of subterranean vertical expansion and horizontal bridging from building to building across thoroughfares are also being investigated and utilized in highly-congested urban areas. Again, Brooklyn College serves as an example, since it is planning to make use of high rise construction and air rights over an existing roadway in order to accommodate its large student population on a small urban site.

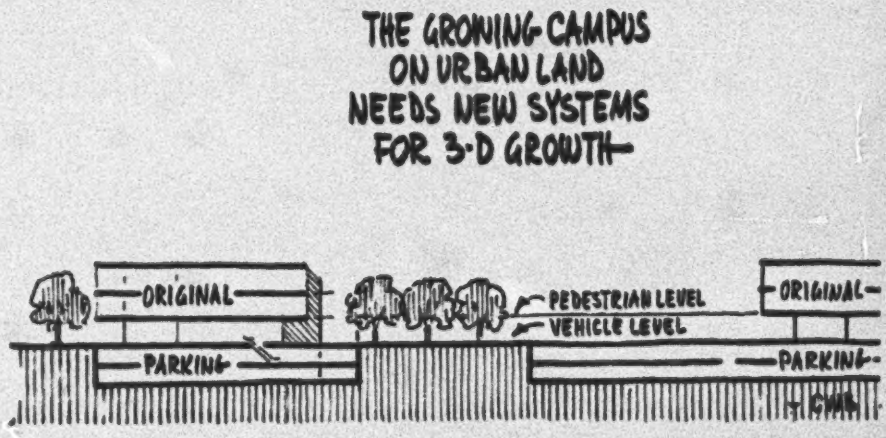
Space requirements may also be economically satisfied by designing buildings to perform multiple functions. A classroom building with convertible wall panels may house classes and other functions ranging in size from seminars to an assembly hall while a day-time dining room may serve as a community concert hall in the evening.[1] In shop and laboratory facilities, careful placement of utility service cores can greatly increase the capacity of these buildings to include expanded and newly-devised equipment.

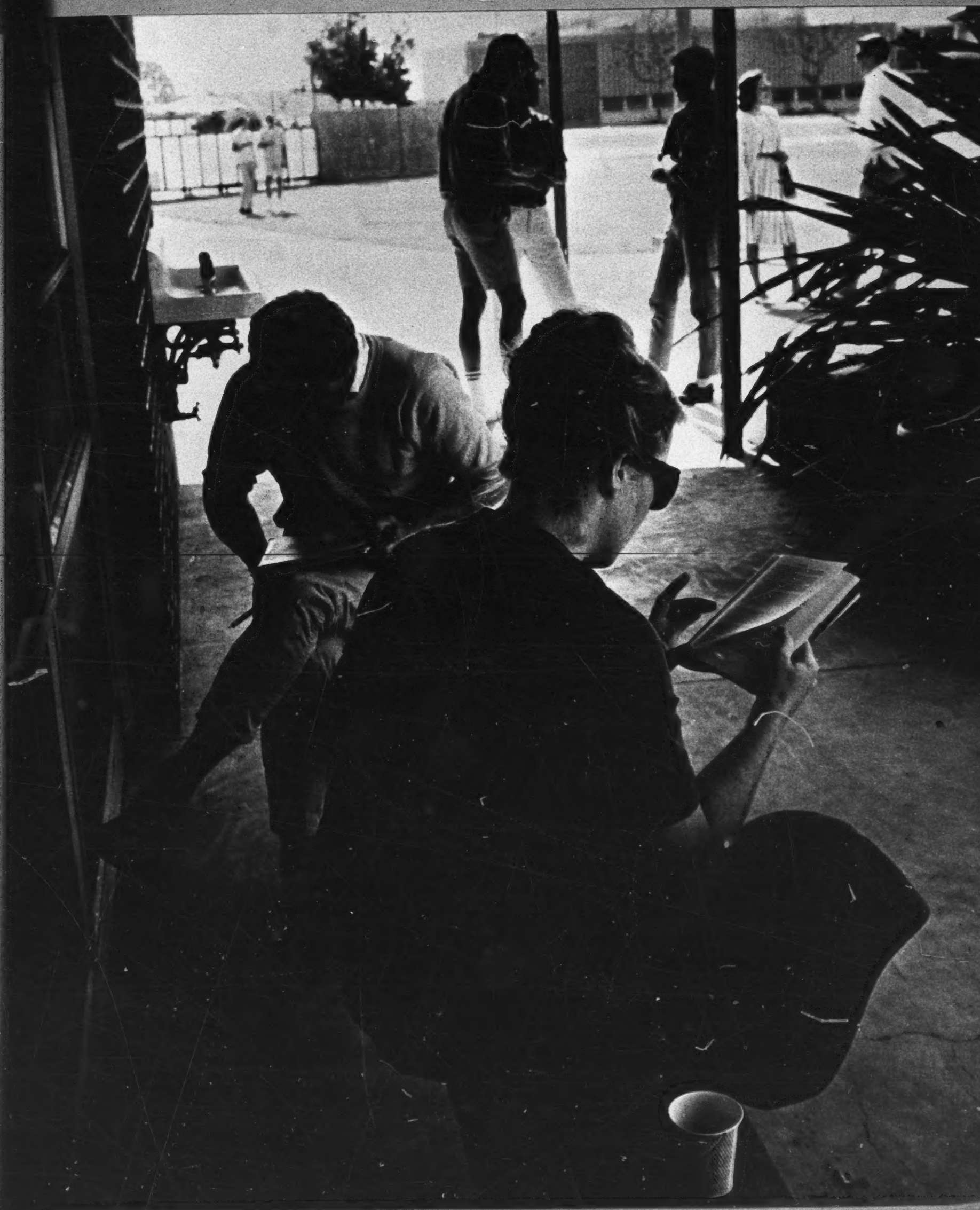
[1]For further information on multiple-function facilities the reader may wish to order the following, without cost, from Educational Facilities Laboratories, Inc., 477 Madison Avenue, New York, New York 10022.
A Divisible Auditorium / Boulder City, Nevada and *SCSD: An Interim Report.*











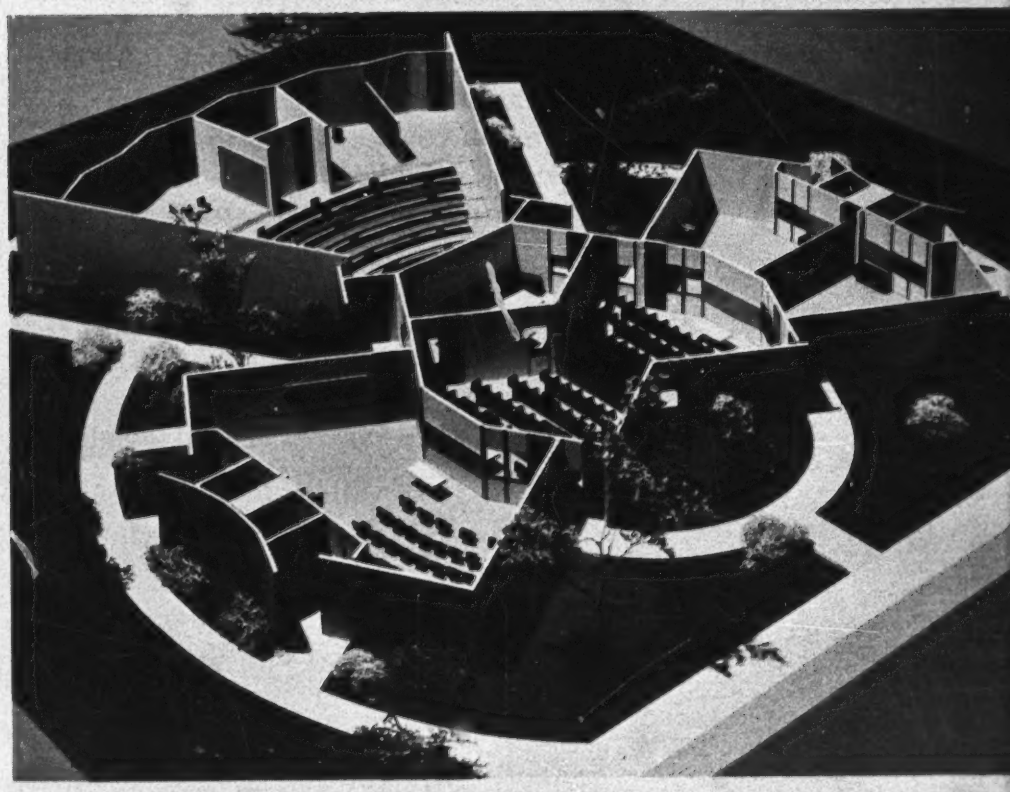
Chapter III Planning Pointers

While it is impossible to anticipate all of the specific questions which the community college planner may be expected to answer, certain problems have already been faced by others.

The following ideas and guides have been distilled from the experience of numerous community college planners and consultants and are worthy of the attention of those planning a new campus.

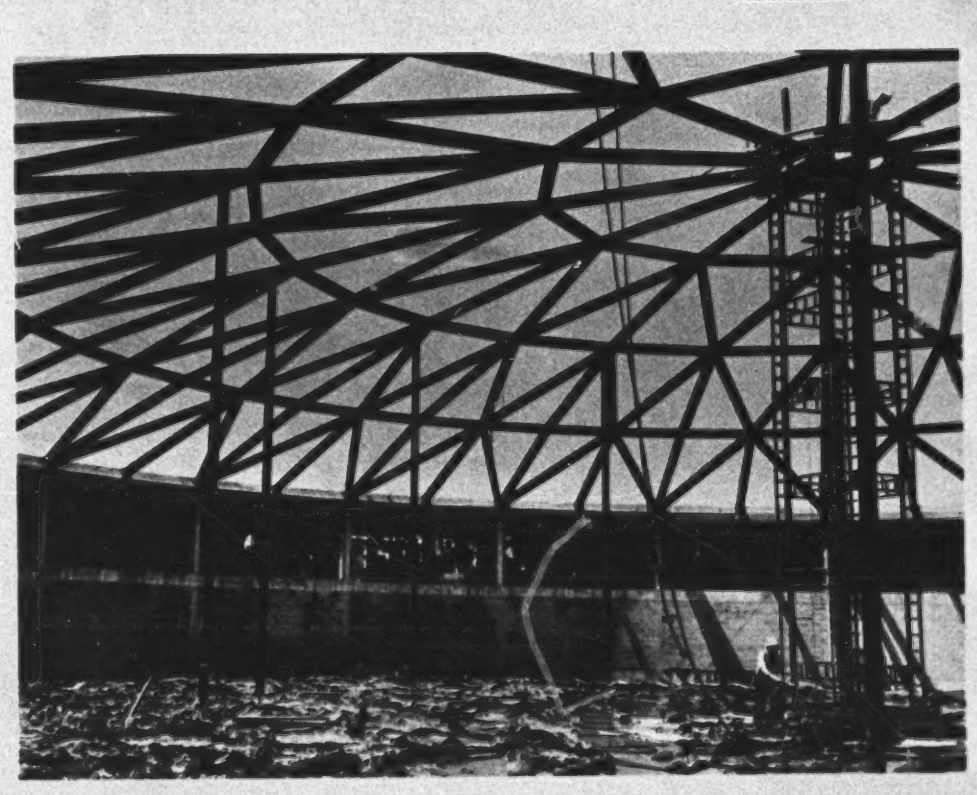
Visitations: Problems ranging from the statement of a college's guiding philosophy to the choice of washroom tile have been faced by other community college planners. Some basic information will be gained through correspondence and telephone calls, or by reading college master plans and bulletins. But this is not enough. Members of the plannning team should definitely make personal visits to other community college campuses (and even four-year institutions) where problems similar to those encountered by the visiting college have been successfully solved.[1] The cost of sending planners on such trips may appear high, but if a visitation results in a single idea that, for example, makes one classroom unnecessary, the trip will have saved the new college some $35,000. Austerity in the planning phases can be costly in the long run.

[1] *A Window to the Future,* the report of the 1964 Airborne Tour, describes the campuses visited by leading educators under EFL sponsorship. Available without charge from the School Planning Laboratory, School of Education, Stanford University, Stanford, California 94305.



When to Buy and Build: Due to escalating land prices and construction costs it may prove less expensive, in the long run, to buy a proposed junior college site and begin construction before the facilities are actually needed. Not only may savings on construction costs (currently increasing 5% per year in California) be possible, but savings may be achieved by taking advantage of slack periods and consequently lower costs in the construction industry. By carefully selecting and purchasing a campus site ahead of time, one California district was able to save the equivalent of the cost of an entire building.

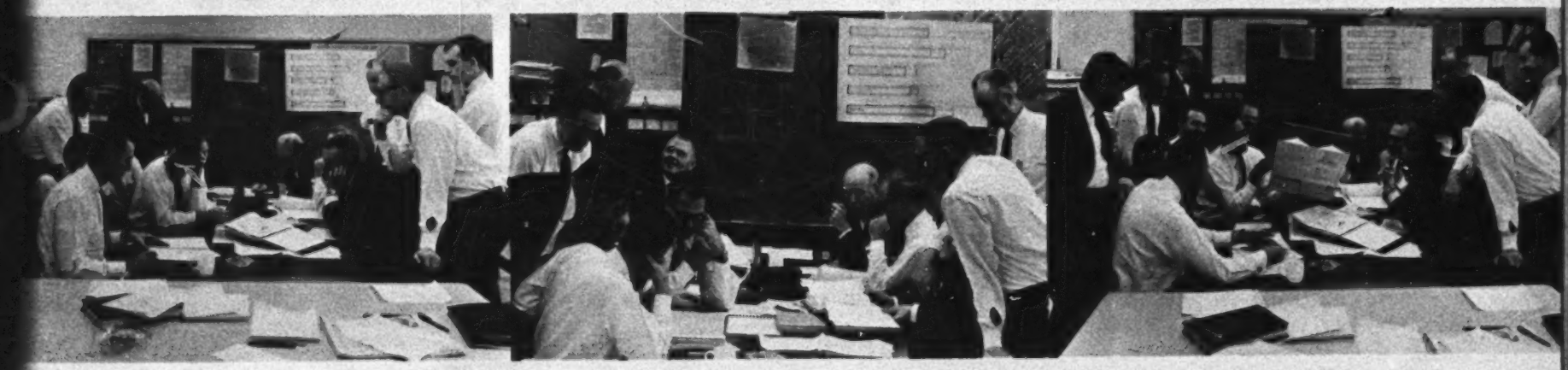
Experimental Design: Some planners feel that bold new designs and experimental approaches to construction should definitely be investigated but should always be approached with great care. It is almost axiomatic that new construction methods will have a certain number of "bugs" that must be worked out, and planners should keep this in mind. Even so, the college which builds an experimental facility may not only acquire a building at less cost, or with more flexibility or use potential, but may add significantly to its own stature and enhance the appear ance of the community.[1]



[1]Two experiments in educational facilities are reported in the following, available, without charge, from Educational Facilities Laboratories, Inc., 477 Madison Avenue, New York, N.Y. 10022.

A Divisible Auditorium / Boulder City, Nevada, and *Conventional Gymnasium vs. Geodesic Field House.*

Planning for Optimum Quailty: Since budget restrictions, pressing needs for service, and preconcieved notions of form inevitably limit the finally constructed campus, many planners recommend that initial considerations focus on what might be called the "perfect campus." An open and creative attitude in the early stages of planning contributes positively to the general conception of the college even if some "perfect" ideas eventually prove unworkable. Modifications demanded by practical exigencies are also more acceptable when the basic plan incorporates the planning team's concepts of the best imaginable campus.



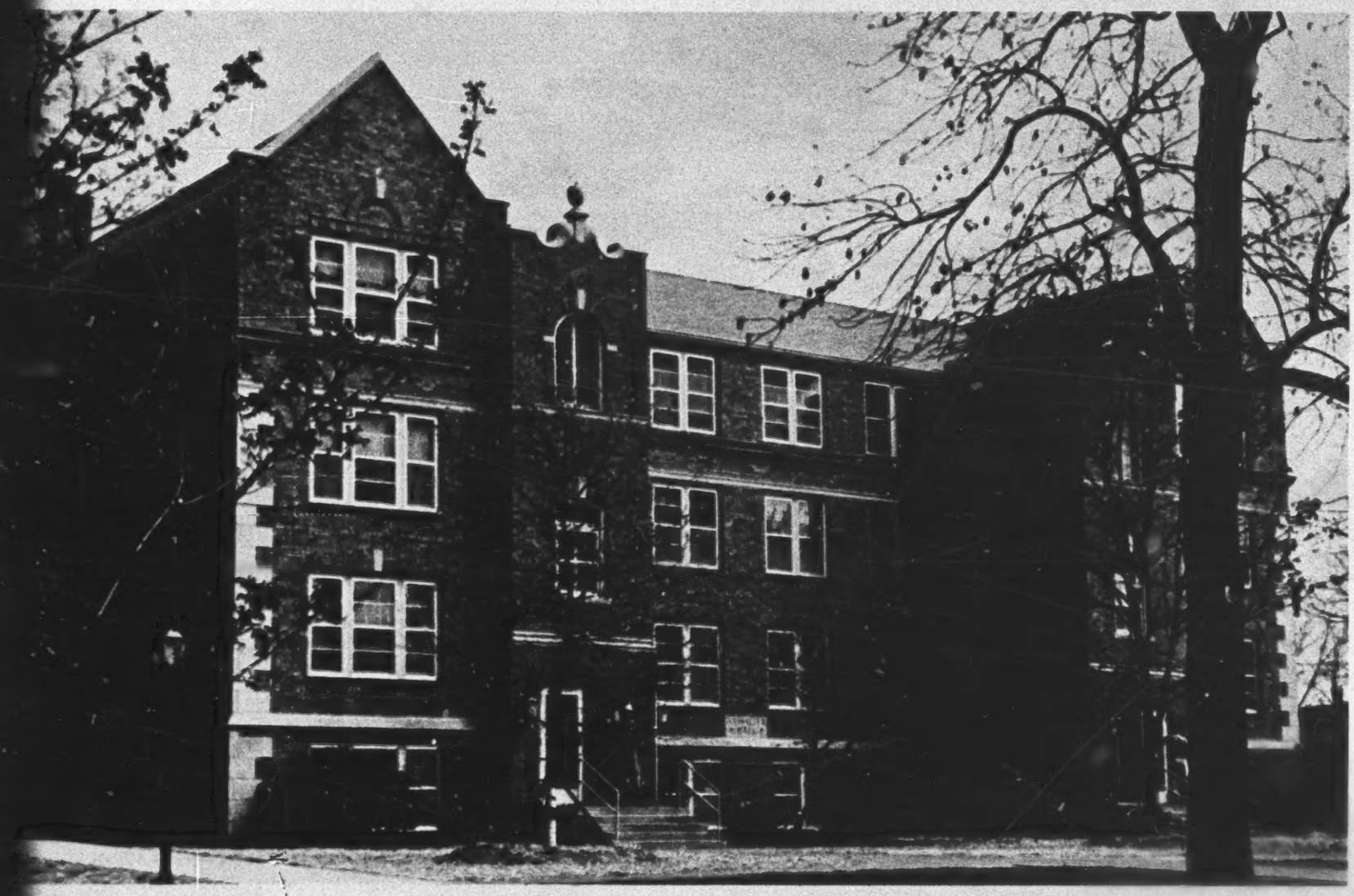
Choosing the Architect: The size of an architectural firm is not necessarily a valid guide. For example, a demonstrably capable large firm may assign a project to less experienced members, while an excellent small firm may not be equipped for a job as large as a total campus. Selection seems to prove most satisfactory when made after correspondence and intensive interviews with many architects, but perhaps the best guides in selecting an architect are the reports of former clients.

The Architect and the Planner: Although it is not the architect's job to determine educational policy, he should be allowed, in fact encouraged, to do his own research and reach his own conclusions as to how he can best meet the college's physical requirements while staying within the budget. While the architect will usually employ a person whose specific job is detail checking, the planner should assume the duty of checking over the architect's work in all phases and conducting a final follow-through. However, continual badgering of the architect may result in a quality of work below his capabilities – as some colleges have found – but leaving the review of all the thousands of details to the busy architect has just as often produced numerous small mistakes (and not a few large ones) which a double-check by the planner could easily have avoided.

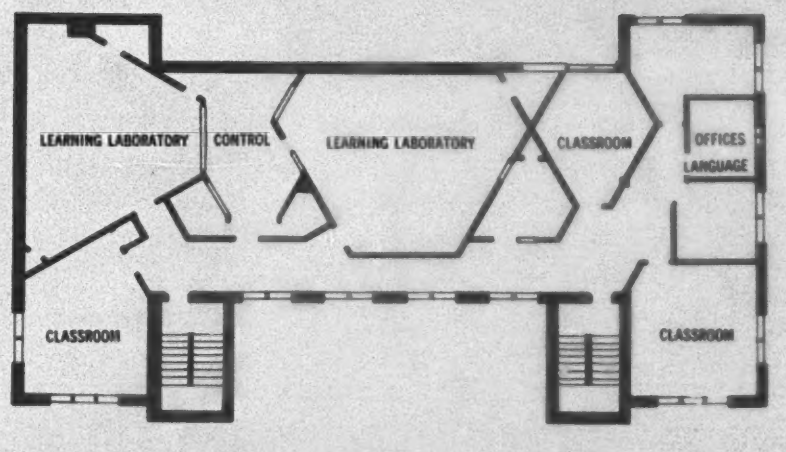
Site Analysis: An engineering analysis of the campus site cannot be included in the 2% planning costs which may be underwritten by the Federal Housing and Home Finance Administration (HHFA). Thus, there is a temptation to have only a superficial analysis made, or even none at all. But a complete site analysis under the direction of the architect, including deep subsoil tests, cannot be neglected without risking a tremendous potential loss in time and increased costs for redesigned plans and changes in already-erected facilities. More than once, the "saving" of the site analysis cost in the planning and building of junior college facilities has, in the long run, resulted in far greater expense. On the other hand, there have been occasions when, in effect, the architect saved the entire cost of his fee by making a careful site analysis and presenting the results to the board.

Existing Facilities: As a part of the site analysis, any existing buildings on the site should be appraised and their potential utility for the college carefully estimated. In considering such facilities there is a strong temptation to equate "existing" with "permanent." Such a temptation should be carefully avoided. Many years of "making do" with a white elephant may use up more in maintenance funds and psychic energy than would a completely new structure.

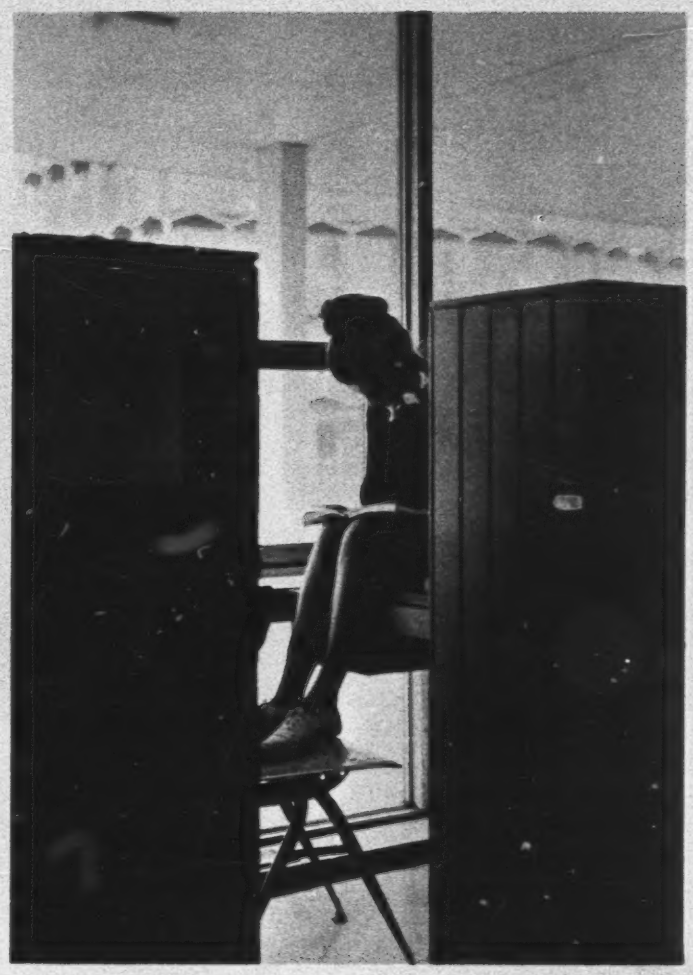
On the other hand, some existing structures may be of great value to the college. For example, Foothill College remodeled three existing country homes on its Los Altos, California site and used them for such non-instructional functions as superintendent's office, faculty retreat, and parking space for campus fire fighting equipment. As an additional benefit, these buildings were used to set the wood and shingle architectural tone for the entire campus, thus performing an aesthetic as well as a utilitarian function.



In another case, Stephens College in Columbia, Missouri, made extensive modifications of an existing building, and turned it into an attractive and highly usable classroom and laboratory facility. (See diagram.) The basic foundations and walls of this structure were sound; only the interior needed modification. Thus, the planners were able to save substantial sums over the cost of a totally new building while effecting a number of design and equipment innovations.



Classrooms: Although prediction of specific size needs in classrooms is hazardous at best, the general trend is toward a greater emphasis on both larger (seating capacity of 200 to 400) and smaller (seminar size) rooms. Some planners feel that classrooms of intermediate size (approximately 40 to 60) may be somewhat wasteful, since they tend to be too small for full utility as lecture rooms and too large for seminars. To the degree, then, that large lectures and small discussion sections will be part of the curricular pattern, classrooms should be flexibly structured to accommodate them.

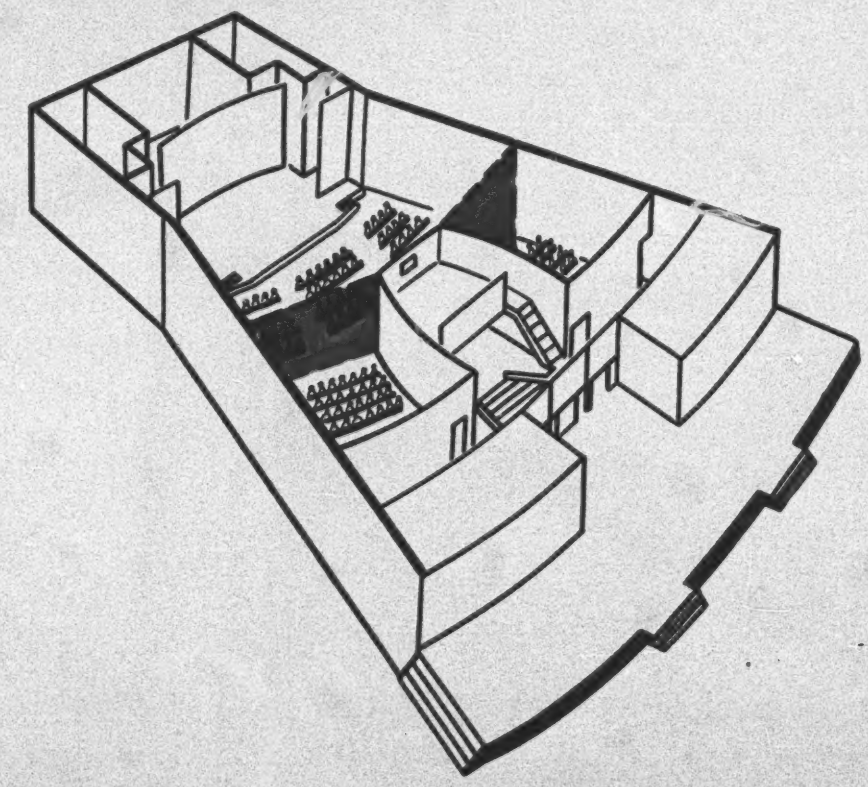


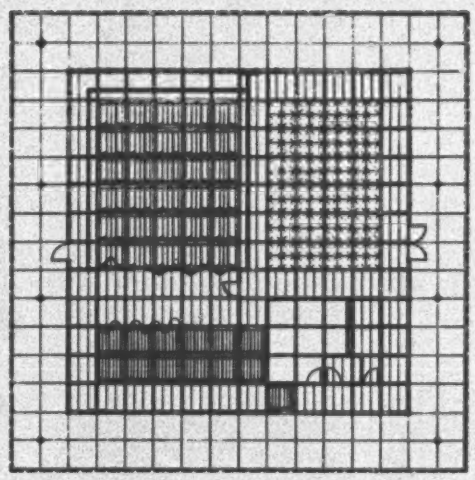
Flexible classrooms are also gaining a wide degree of acceptance. Many colleges and other schools have eliminated the traditional series-of-boxes classroom buildings. Instead, entire floors have become open, carpeted loft spaces with a supply of convertible wall panels. These floors may then be divided at will into an almost infinite number of class areas, or left open for large group meetings.[1]

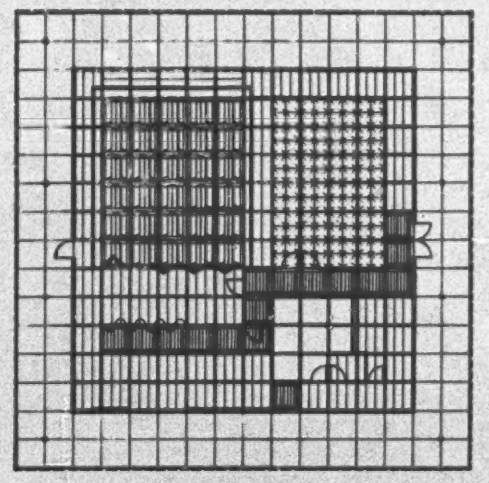
An outstanding example of flexible use of space is the auditorium at Boulder City, Nevada. This structure seats 500 when in auditorium configuration but may, in the space of a few minutes, be converted into three large sound-proofed classrooms by means of operable walls. Thus, a large but seldom-filled auditorium is justified on the basis of its multiple classroom utility.[2]

[1]Although it is devoted almost entirely to primary school applications, the publication *Schools Without Walls* (available without charge from Educational Facilities Laboratories, Inc., 477 Madison Avenue, New York, N.Y. 10022) should be of interest to the reader.

[2]For a discussion of new design trends the reader may be interested in the following audio-visual presentations, available for viewing without charge: *To Build a Schoolhouse,* a 28 minute, 16 mm film, narrated by Chet Huntley, from Educational Facilities Laboratories, Inc., c/o Association Films, Inc., 347 Madison Avenue, New York, N.Y. 10017. *Modern Trends in Community College Facilities,* a 20 minute color slide and tape presentation, from the Community College Planning Center, School of Education, Stanford University, Stanford, California.

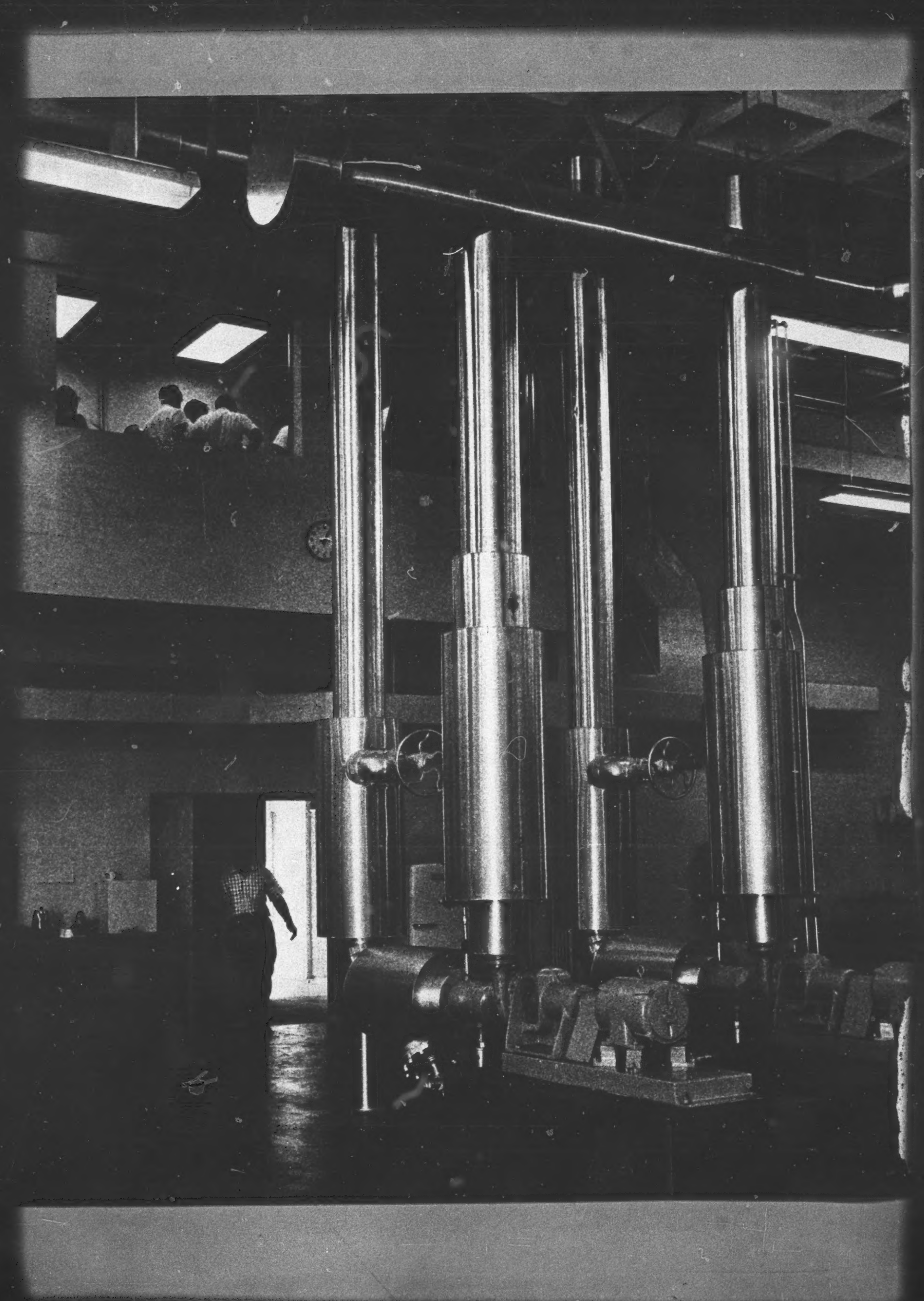






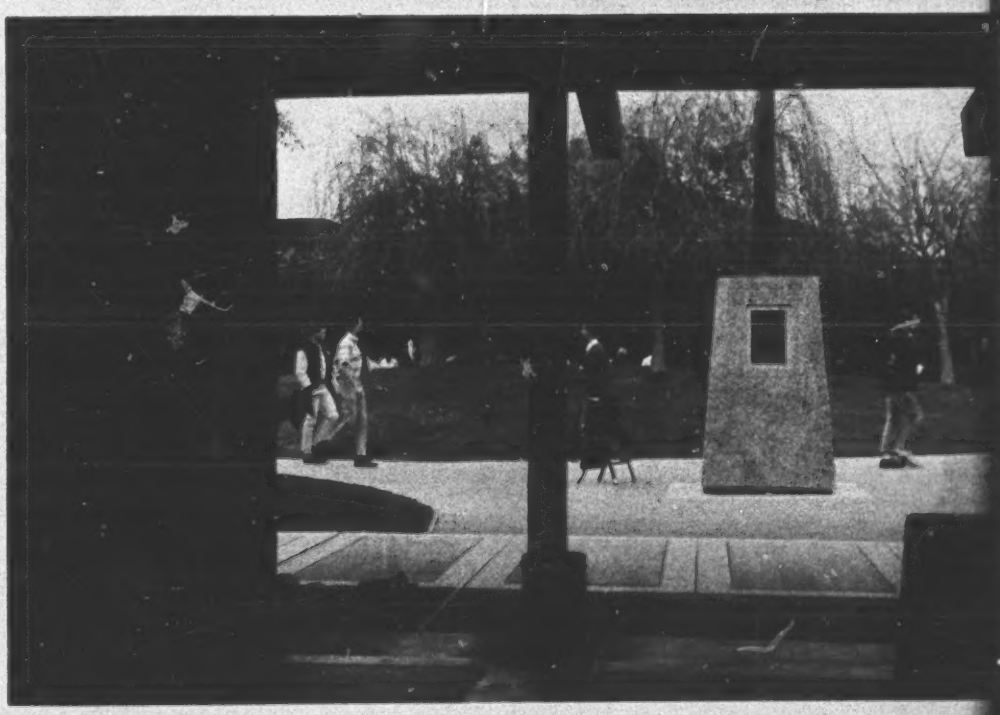
The prime example of planning for flexibility is the School Construction Systems Development Project located on the Stanford University campus. By using the systems approach to school construction, the architect can create a building shell containing nothing but open space – to be arranged and partitioned to fit the educational program. Since nearly all the ducts, pipes, and wires are carried in the utility space between the ceiling and the roof, interior walls need not be fixed or even existent at all. Instead, the interior can be divided by operable walls, sliding partitions, and moveable panels – all of which can be put in place, moved, or taken down with a minimum of trouble. This tremendous degree of flexibility in interior space use was gained only after educators, architects, and manufacturers worked to design the various components (structure, lighting and ceiling, ventilation, and interior partitioning) for ease of integration.[1]

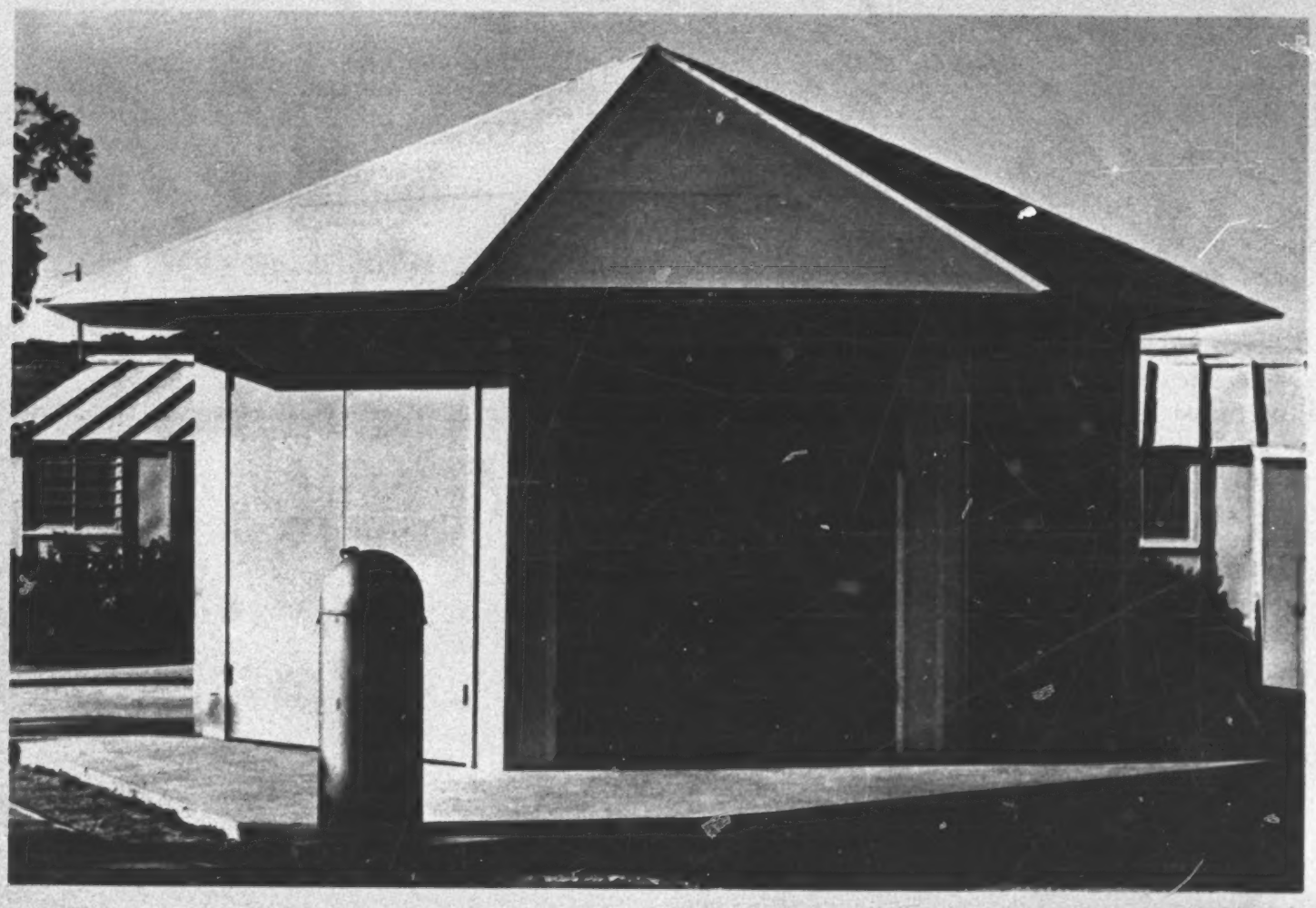
[1]For additional information on SCSD the reader may secure without cost, *SCSD: An Interim Report*, from Educational Facilities Laboratories, Inc., 477 Madison Avenue, New York, N.Y., 10022.



Utilities: Particularly for new campuses, the availability of utilities is a prime consideration in planning. Just to suggest the range of services performed by a single utility, water is needed for drinking, cooking, cleaning, sanitation, conversion to steam, fire fighting, sports, irrigation, and even instruction. Electricity, gas, water, and fuel oil are currently most used, but planners even now should start thinking of atomic reaction and solar heat as distinct possibilities for power. Though utility choices will vary widely according to region, a few principles seem generally applicable for college campuses. For example, a single power plant, central heating facilities, and central sources of water seem preferable for many, although not necessarily all parts of the country.

Since utilities occupy spaces within buildings which are extremely inaccessible once the structures are completed and in use, it is wise to make provisions in the original construction plans for even those utilities which are not necessarily expected. For example, there may be no plans for curricular use of television and electronic aids, but installation of underground raceways between buildings adds very little to building cost, and can prove a great saving in campus use, time, and money if, as appears likely, electronic devices continue to play an increasing role in instruction. One community college has discovered the thrifty expedient of hollow, box-section sidewalks to house future utility raceway space. Another, using less foresight, found it necessary to spend extra funds into six figures on the installation of air-conditioning when an unexpected summer session disclosed that no ductways had been included in initial construction plans.





Temporary Buildings: The use of surplus army barracks, quonset huts, and other temporary structures may allow considerable savings during the initial building phases. But some of these same structures still exist, in ramshackle condition, a decade or two later, and become almost impossible to destroy because of real or imagined vested interest. Possible answers here are 1) to establish in the master plan definite provisions for phasing out such structures as new buildings are built, or 2) to choose types of temporary buildings in the beginning which need not be phased out but which may be kept indefinitely. Some of these are now built specifically for school use, and while they are more expensive than surplus buildings, they usually cost less than comparable permanent structures and offer the advantages of portability, prefabricated design, and self-contained air-conditioning and heating.[1]

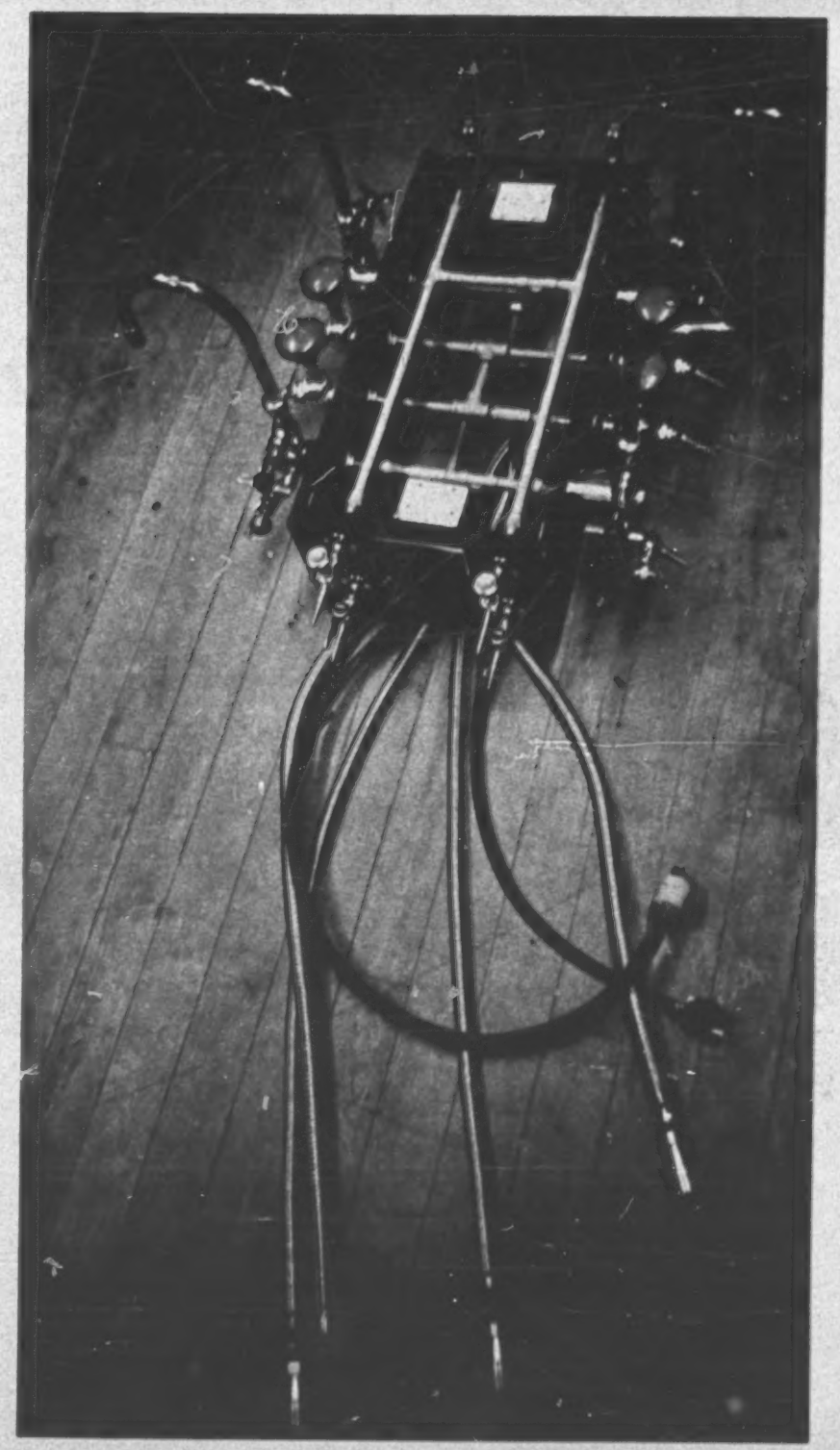
[1]The publication, *Relocatable School Facilities*, available without charge from Educational Facilities Laboratories, Inc., 477 Madison Avenue, New York, N.Y. 10022, provides information about such structures.

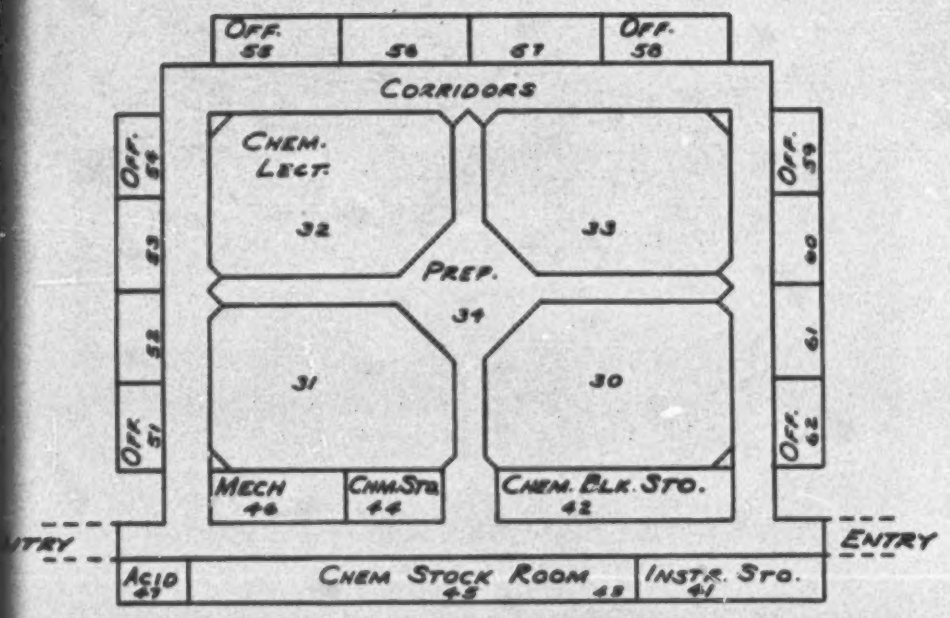
Science Laboratories: Most planners have come to realize the need for additional laboratory space and suggest that future laboratories be built with 30 to 36 stations rather than the traditional 24. While not all instructors in laboratory sciences agree, it is felt by many that newer instructional techniques, especially audio-visual aids, will allow these larger laboratories to handle effectively the work now done in the traditional number of stations.

With changing emphases within the sciences, certain subjects are sure to need much more space than others in years to come, but which directions these changes will take is extremely difficult to predict. It is advised, therefore, that as many laboratories as possible be designed to handle several subjects, thus making it easier to accommodate changes in emphases from semester to semester or over the long range. If this is beyond budgetary capabilities, planners advise that at least a few laboratories be constructed so that a change, say from biology to physics, could be handled with a minimum of dislocation. A physics laboratory, for example, may have little need of gas jets and a vent hood; yet at only a slight increase in cost, capped gas lines and a covered ceiling vent can be built in, and the room may later be swiftly converted to a chemistry laboratory by adding gas valves and installing a fan and hood.

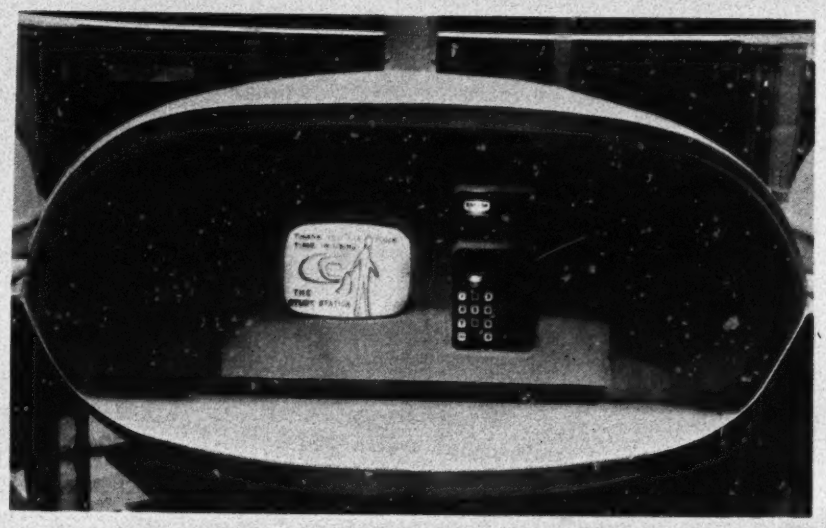
Another idea, now in use at the Evanston campus of the Southern Illinois University, is the installation of a unit called a "wet and dry utility box" which will allow a laboratory to be readily converted from one science to another when installed along with appropriate laboratory tables.

Arranging science lecture rooms radially around a combined utility core and preparation room for lecture demonstrations adds greatly to construction savings and building flexibility. As one college recently learned, however, adequate space provision should be made for the preparation room since the faculty will tend to convert it into a storage plus preparation area as time passes.





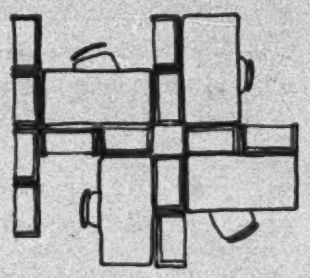
Faculty Research Facilities: Although this condition may change, community colleges do not need elaborate research facilities. Yet some provision should be made for at least a minimum of space to house the faculty's scholarly work which many feel necessary to vibrant and dynamic instruction. Faculty rooms in the library, small laboratories in science buildings, and especially preparation space for departments emphasizing demonstrations seem to be essential. While concrete rules for the amount of such space will differ from campus to campus, reserved carrels for ten per cent of the faculty, and one physical science laboratory and one life science laboratory for every two hundred faculty seem to be appropriate minimums.

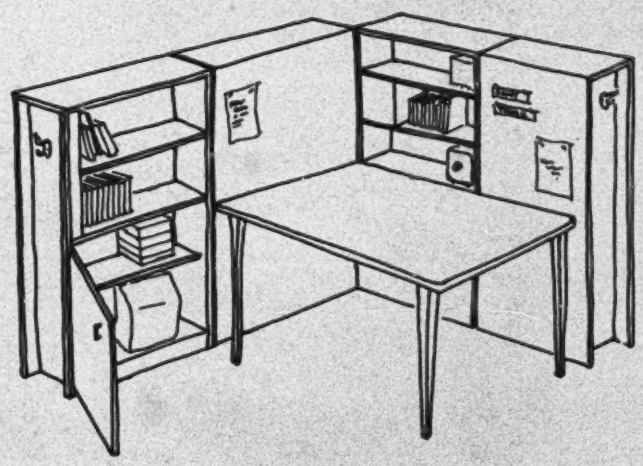


Student Study and Typing Spaces: Individual study spaces such as carrels with soundproofing, lighting, desk, and storage space, are not only desirable, but to a large degree, required on a commuter campus. Students should have adequate study space and an identifiable physical spot which is "theirs" on campus. Such carrels, if equipped with audio-visual aids connected to a central program distribution station, will take some of the load from classrooms and teachers by allowing the students to do basic and repetitive learning tasks, as well as more detailed study of materials sampled in class at their own pace and without taking class or instructor time.

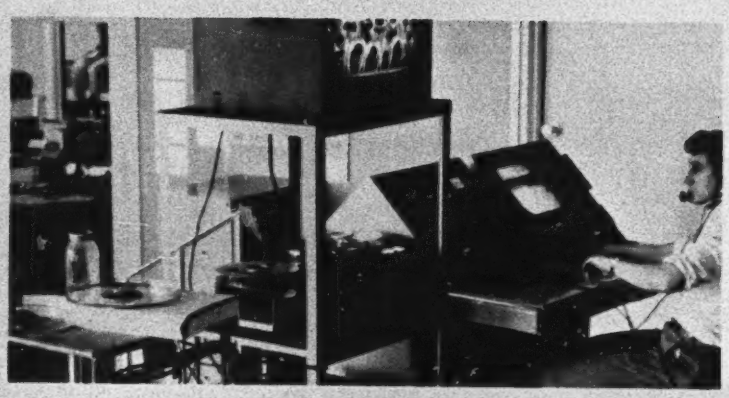
Students definitely should have quiet private study areas whether or not a sophisticated electronic approach is used. Such spaces would ideally include typing facilities, but if soundproofing is not adequate, it is better to place typewriters (and other noise-producers) away from the carrels.[1]

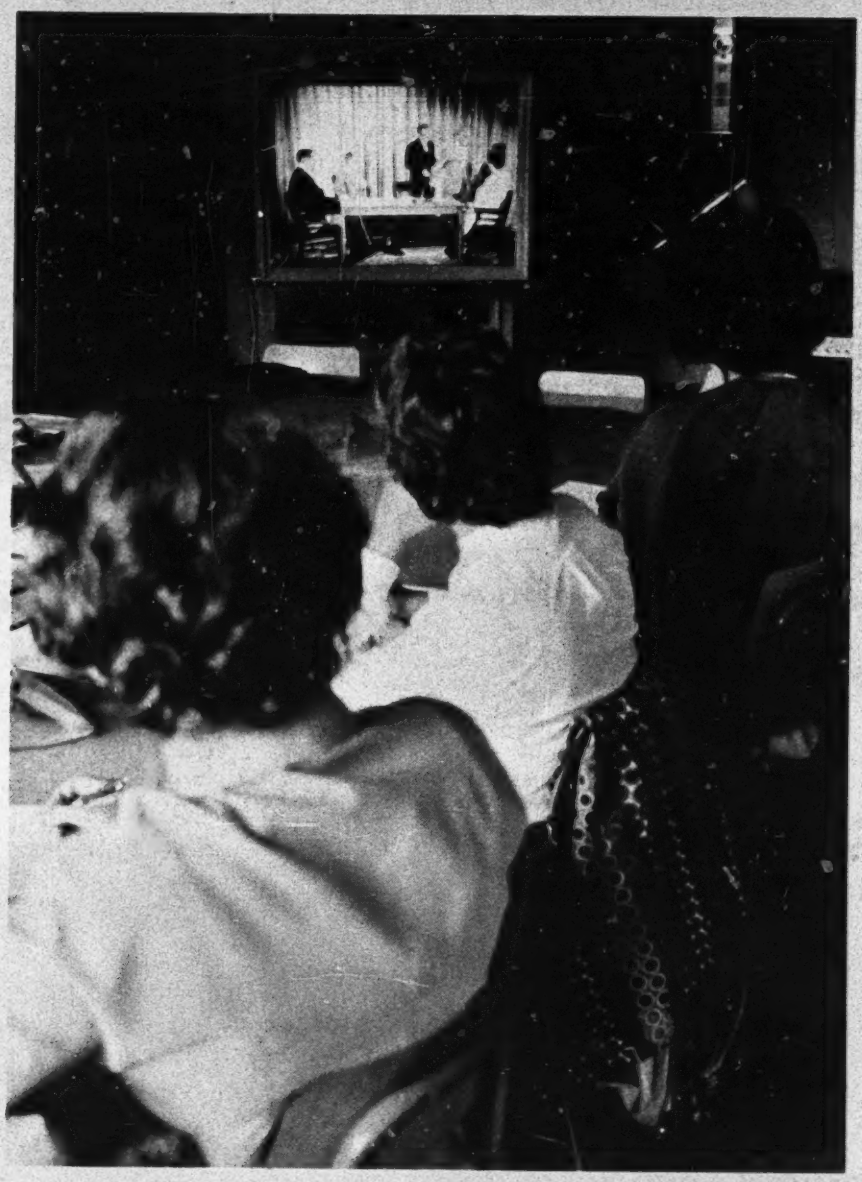
[1]For readers interested in more specific information about student study spaces and needs, the publications *A Study on Studying* and *Study Carrels* are available without charge from the Community College Planning Center, School of Education, Stanford University, Stanford, California.

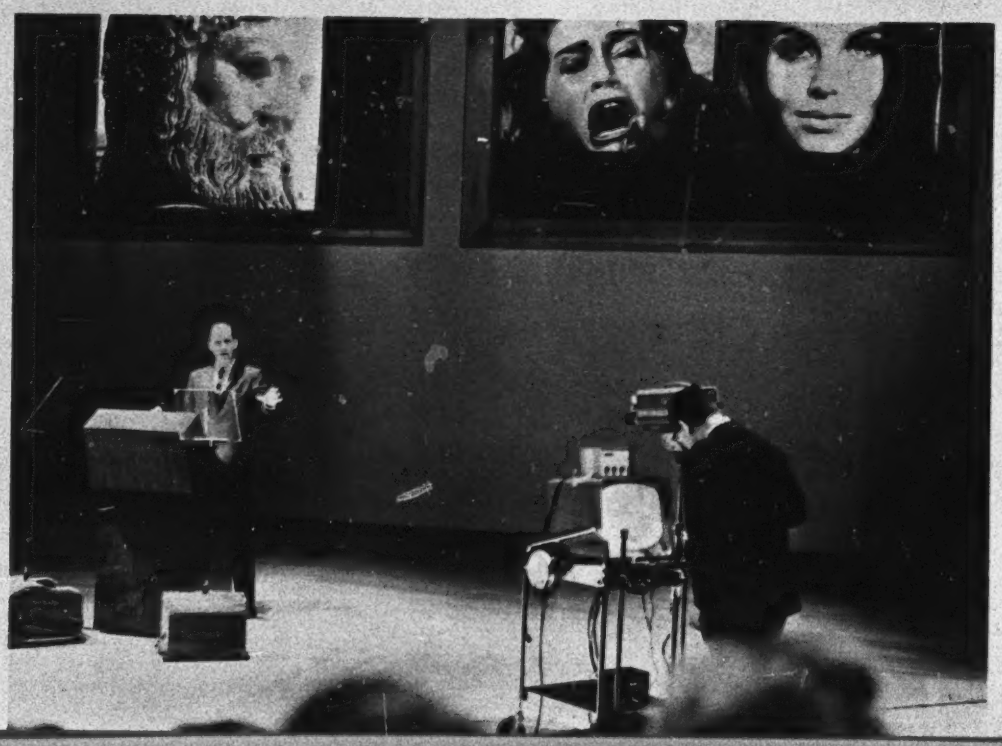


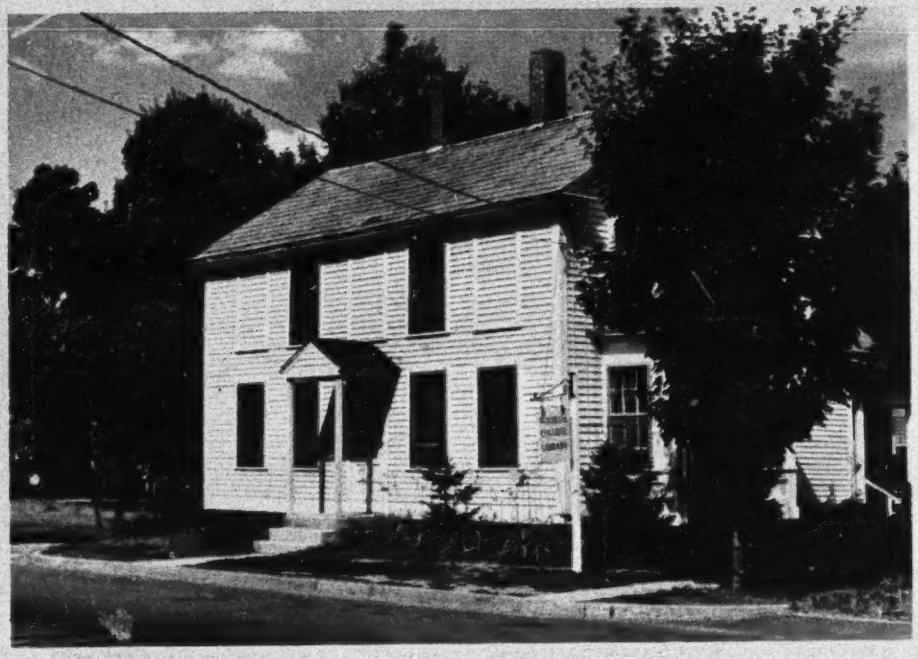


Educational Television: Televison teaching may be a valuable supplement to campus instruction and a major community service. The necessary equipment is not inexpensive, however, and should be planned with great care. Also, for television teaching to be truly effective, the local faculty should play a major role in creating programs. This indicates a need not only for studio and broadcast facilities, but also for possession of or access to videotape equipment.









The Library: As the community college grows, its library can rapidly become inadequate. The need for library expansion will be just as crucial as the need for expanded classroom facilities, if not more so. But since the library belongs to everyone, and thus no one, this need is not often met and many libraries are lagging as their colleges progress.

A possible solution to this problem is to build the library much larger than needed for the enrollment expected ten years hence, and to use the extra space in the meantime for instructional and other non-library functions. As library needs grow and new classroom buildings are constructed, classes can be moved out of the library and be replaced by stacks, carrels, and other library facilities. Not only will this work toward full utilization of the library building, but it will also allow classes to begin before classroom buildings are constructed, and may even forestall the need for

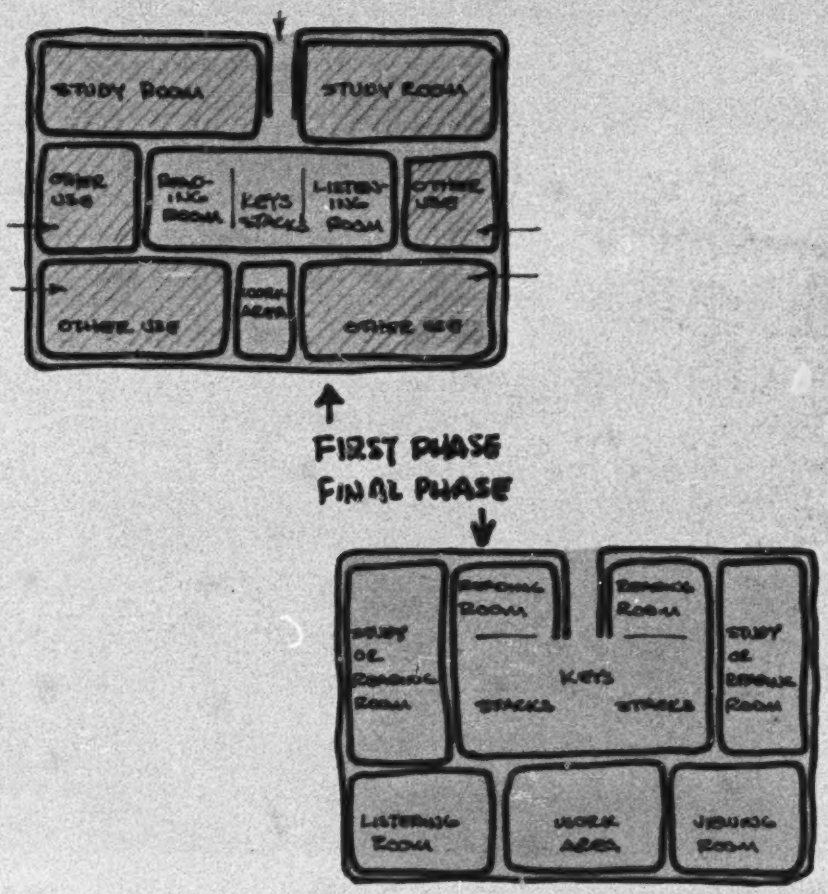
some classroom facilities. Savings in time and money should also accrue since library growth can be planned and executed without reconstruction costs at a later date with higher prices, and since there will also be room for unexpected change.

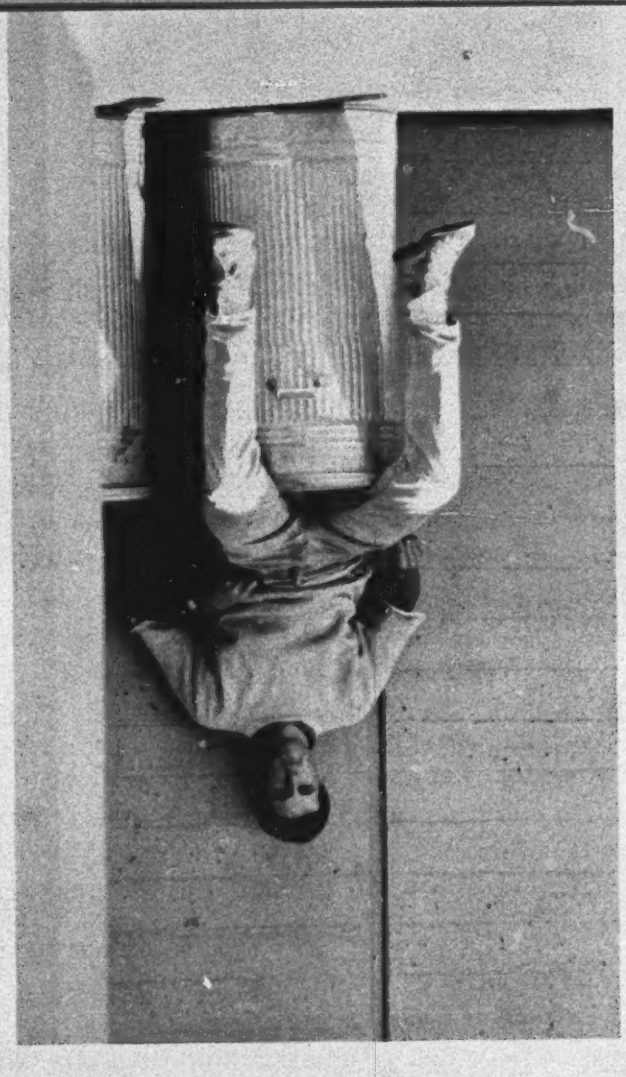
Planners are careful to advise that if a college is planning "scatter" libraries throughout the campus, it is necessary to treat each of these smaller units as a library in its own right and to supply it with both an adequate library staff and the necessary filing and storage equipment. If these are neglected, not only will materials be lost, but the effectiveness of the library will be seriously compromised.[1] An unattended reading room is one thing, but a library of any size will need certain basic personnel and facilities in order to function effectively.

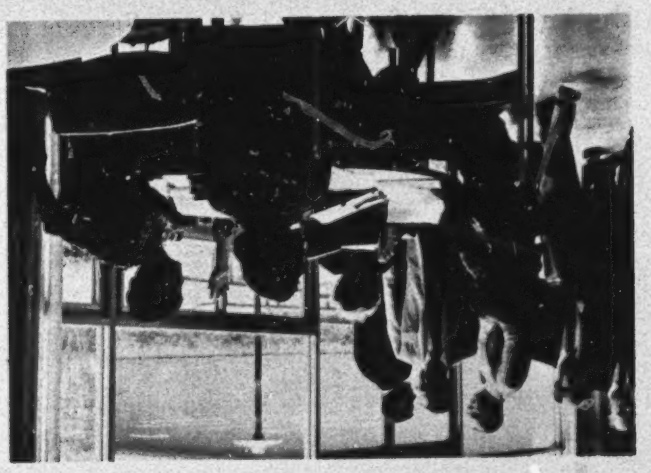
The Bookstore: One of the interesting ideas presently being investigated is the possibility of combining the library and the bookstore. This may allow economies in book and supplies purchasing, but more importantly, it will tend to add some of the bookstore's attractiveness to the library while adding the library's greater book resources to the bookstore.

Whether or not such an ambitious combination is contemplated, it must be remembered that an effective college bookstore should not be simply a store, but an educational experience. As an integral part of their general education, students should be able to wander among banks of well-arranged displays which attractively present the required and supplementary materials for the entire curriculum. The bookstore ought to go even beyond the range of the immediate curriculum; paperbacks, magazines, art reproductions, recordings, and countless other offerings can serve to make the bookstore important in enriching the community college.

[1]Readers interested in further information on libraries may be interested in *The School Library* and "Libraries" in *Bricks and Mortarboards,* both available, without charge, from Educational Facilities Laboratories, Inc., 477 Madison Avenue, New York, N.Y. 10022.







The College Union: While any college union may play an important part as a neutral meeting ground for students and professors, the special function of the union at the non-residential community college is especially significant. There is great room for imagination and creativity in making this center of campus social life a relaxing and desirable locale for conversation, recreation, and out-of-class learning for both daytime and evening functions.[1]

One problem should be considered, however, in designing any major gathering centers for community colleges, especially in sociologically heterogeneous communities. Members of minority and special interest groups tend to gather together to socialize; and while the college may not wish to force different groups to mingle, it nevertheless will want to avoid encouraging the formation of cliques, some of which may be seriously detrimental to their own members and to the atmosphere and even the reputation and the property of the college. One simple way of alleviating this problem is to plan the union with open areas rather than small alcoves.

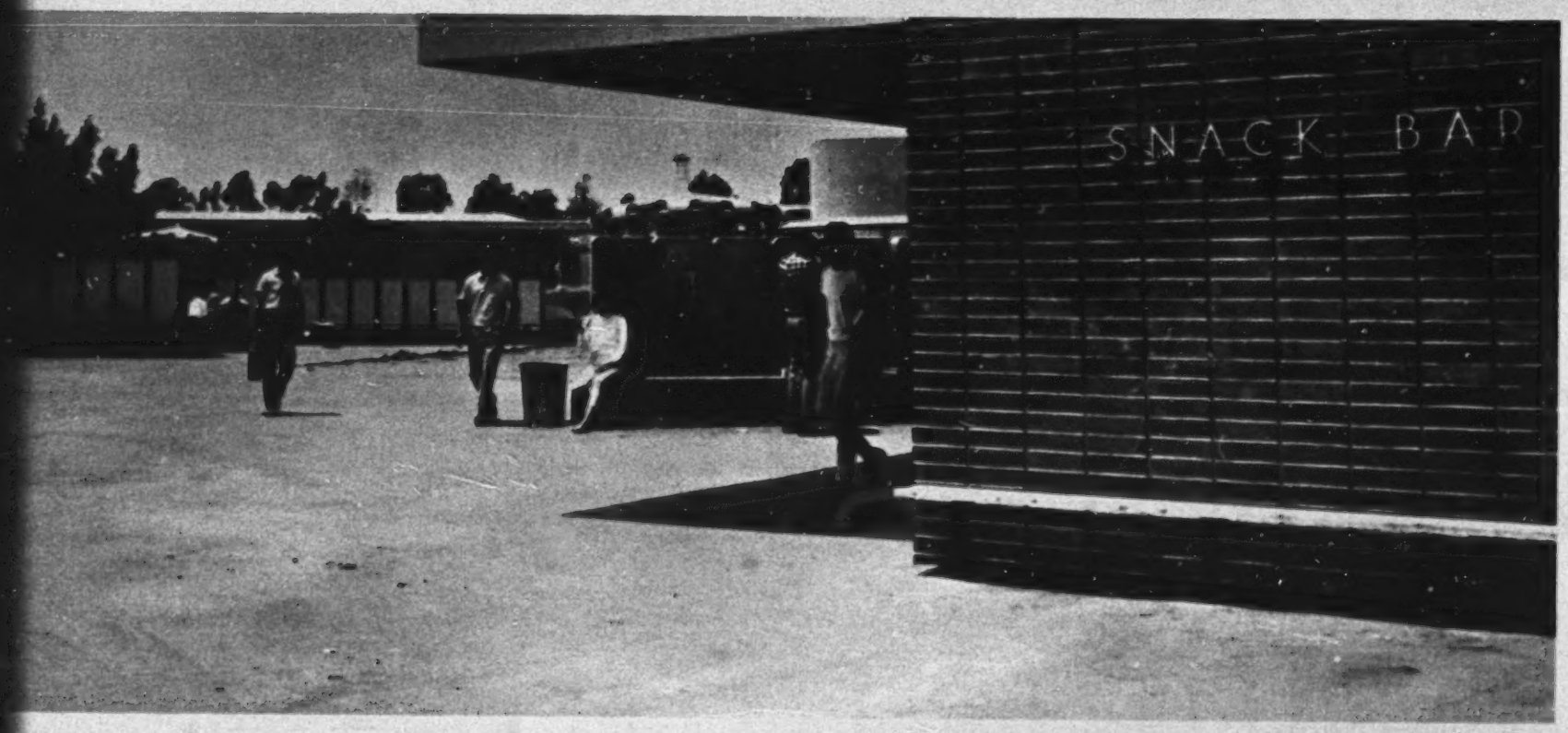
[1]For further information regarding college unions and their functions the reader may wish to see *New Guide on College Unions,* available at $2.00 from the Association of College Unions – International, Willard Straight Hall, Cornell University, Ithaca, New York.

Food Service and the Cafeteria: A cafeteria as initially planned is often unable to service adequately the increasingly large numbers of students. If the cafeteria has been designed rigidly, with only one service line, and if it is the only spot on campus at which students may obtain food, then it should come as no surprise when cafeteria lines are long, time is wasted, and the cafeteria becomes uncomfortably crowded.

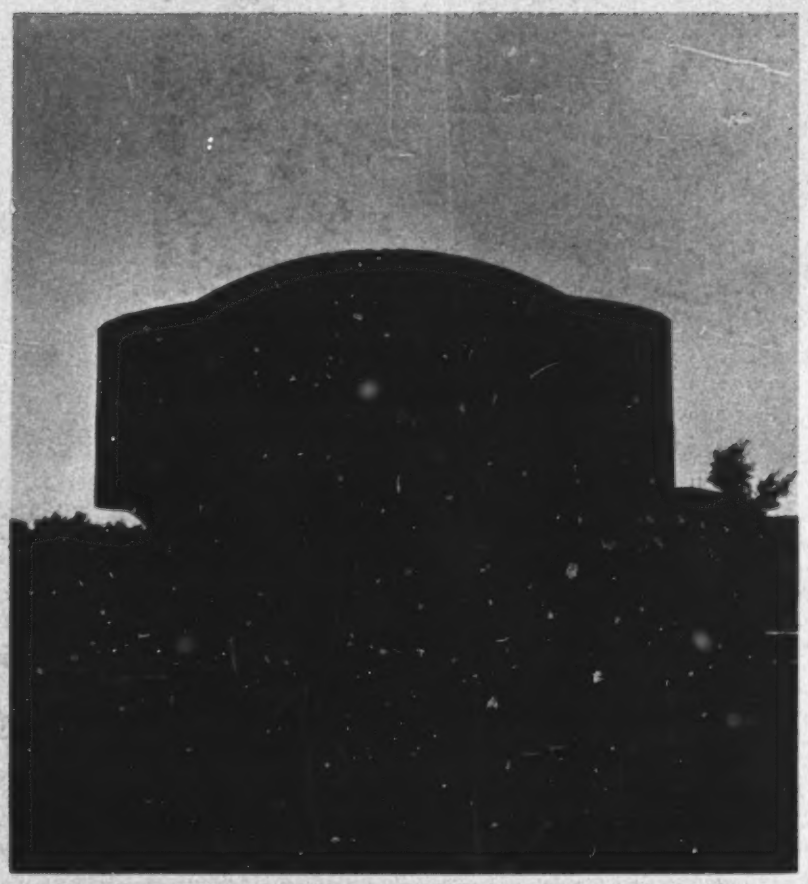
Planners have come to realize that, in many cases, students may only want coffee or a snack, and have accordingly set up "scatter" cafeterias in the form of limited service lines and vending machines within the cafeteria and at various spots across the campus. These tend to satisfy the need for quick snacks and also allow the students to save the time they would otherwise have to spend crossing the campus, waiting in line, and searching for a vacant seat.

One junior college planner has gone even further. Dissatisfied with the limitations of vending machines, he has supplemented them with small "kiosks" across the campus. These are manned by students in the hotel and restaurant management training program who serve hamburgers, hot dogs, and other short-order items. Not only does this system give students a certain amount of training and income, it also considerably eases the cafeteria overload. In addition, the kiosks are currently returning 22% per annum on the original investment.

The cafeteria may easily be called upon to perform the multiple function of food service area, ballroom, concert hall, convention center, registration area, etc. When the gymnasium is used for such purposes, street shoes, food spillage, and cigarette burns will inevitably damage the hardwood floor. The cafeteria, on the other hand, is designed with food service and street shoe usage in mind. In addition, the food services for other events can easily be handled in the kitchen. This is infinitely preferable to carrying food to the gymnasium or preparing it in a locker room.



However, it is important to recognize that for the cafeteria to serve such multiple functions, extra attention must be paid to acoustics and design. At one recently completed junior college, it is was discovered too late that load-bearing columns down the center of the room, while not hindering food service, precluded use of the cafeteria for dances and other social gatherings.



Community Services: Because the college is a part of its community, it will include various community services which may or may not be found in other colleges. Although the regular program may call for a relatively small auditorium, it may be advisable to build a larger one so that a sufficiently large percentage of the community can attend lectures, concerts, plays, and other special events. The auditorium, incidentally, should be created with convenient parking facilities that do not conflict with regular campus parking.

Other examples of facilities used by students but even more by members of the community are the planetarium and the observatory. Presidents of several California community colleges report that astronomy programs centering around these facilities have been enthusiastically received by both adults and children in the surrounding community. Such programs may easily create a desire for further education on the part of the participants, and can also help engender long-range and broad-scale community support for the college.

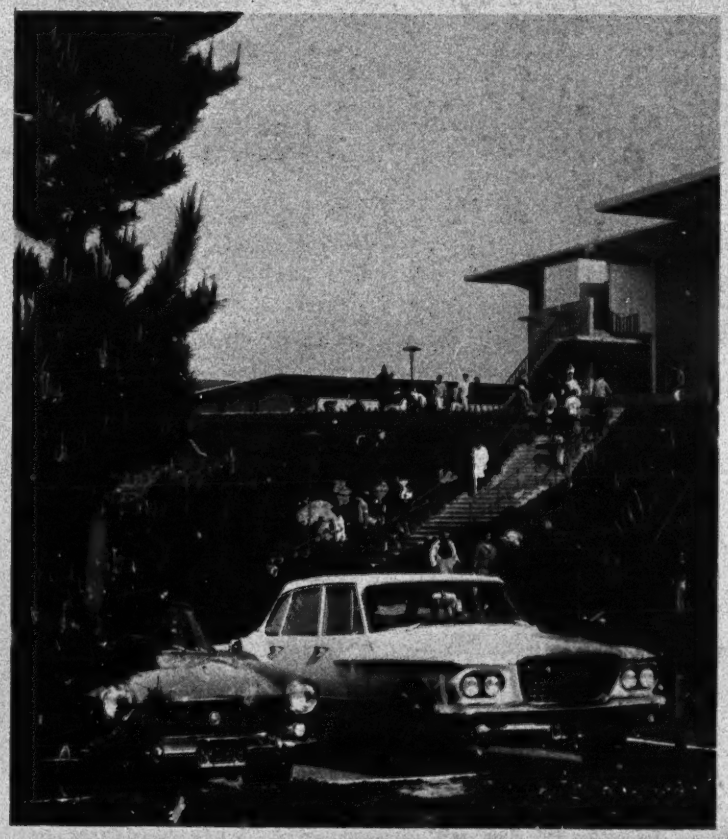
Parking: With the exception of a few institutions in downtown urban centers close to public transportation, students at most commuter colleges rely primarily on private automobiles for their transportation. If on-street parking is available, it will be used by many students (even at the risk of a citation) in preference to walking or paying a parking fee. Local property owners bear the brunt of blocked driveways, littered sidewalks, noise, and traffic congestion. Forcing such a burden upon community members will certainly jeopardize the college's standing in the community. The expense (and the convenience) of on-campus parking is highly preferable to the unfortunate events which occur when students must park in the community.[1]

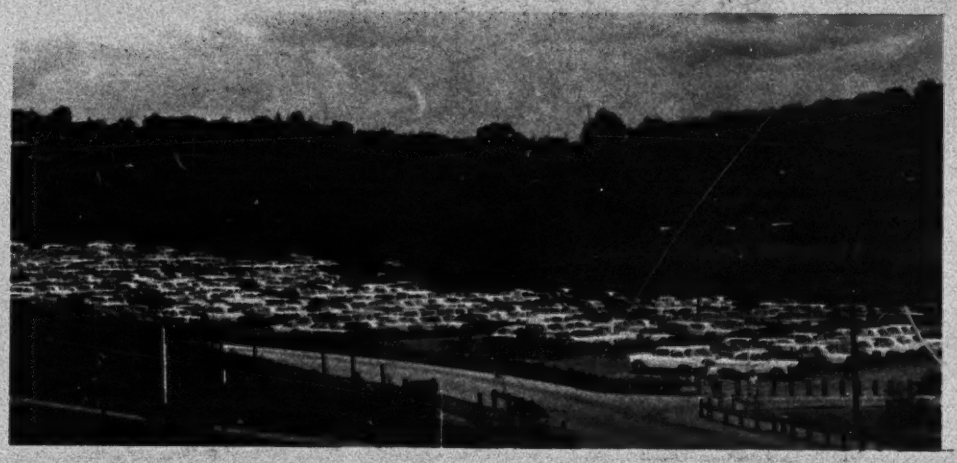
If only one or two large parking lots are planned for the entire college, as frequently happens, parking spaces at the outer areas will necessarily be some distance from the buildings. But even more serious is the traffic congestion which results from hundreds or thousands of cars funneling in and out of these large lots, causing delay and a dangerous traffic situation. One answer is to plan several smaller lots which will be close to the buildings and will help break up the traffic flow. A further means of dispersing traffic congestion is to require students to pay any necessary fees upon leaving the parking lots rather than upon entering. This helps students get to class on time and keeps long lines of traffic from backing up into the community. A sufficient number of access roads to campus parking areas is essential to avoid congestion.

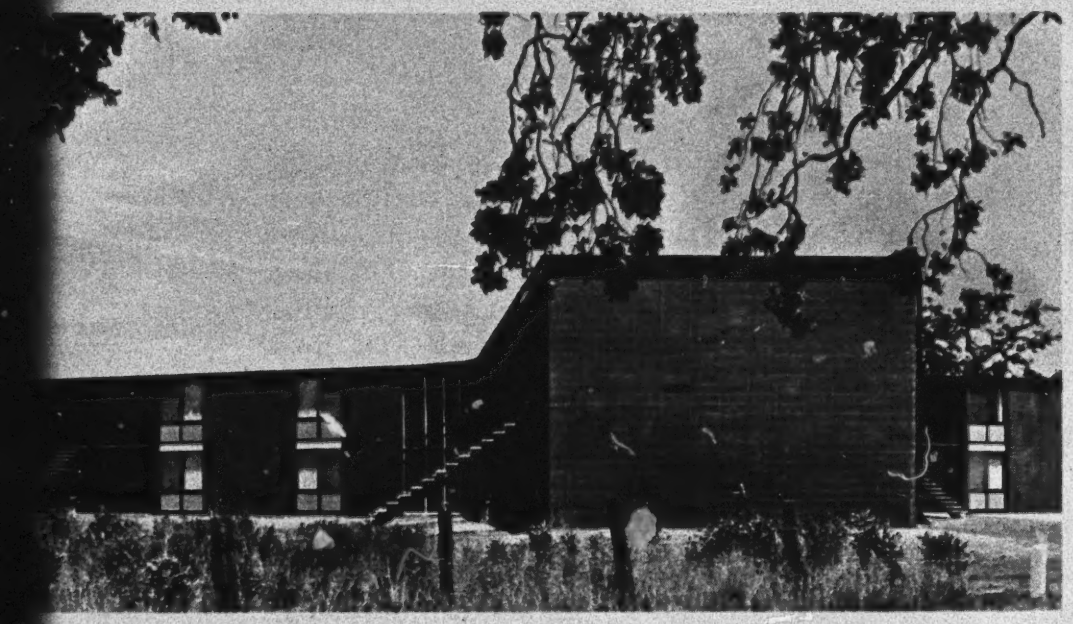
Many planners simply do not allow enough space to accommodate the number of cars that will arrive on campus. Even with public transportation available, an ever-increasing percentage of students drive cars to college. Most community colleges can expect at least one car for every two students.

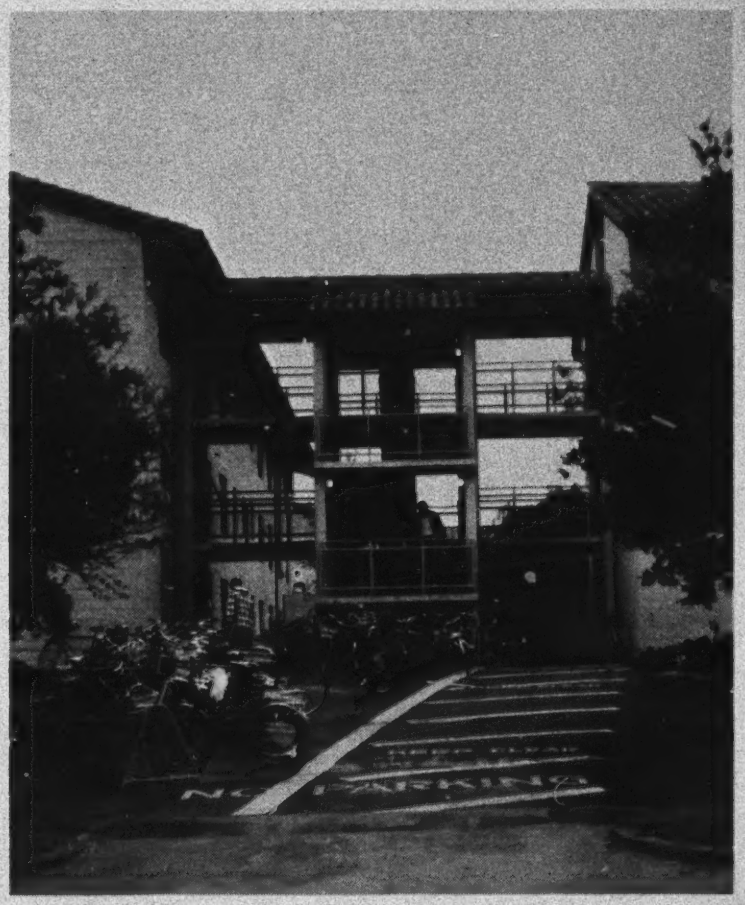
[1]For the more complete treatment of campus parking problems the reader may be interested in *Parking for Universities*, from Educational Facilities Laboratories, Inc., 477 Madison Avenue, New York, N.Y. 10022.

Because of the undesirability of bringing cars too close to the center of campus life, and because of the nature of parking lots, planners have been unable to put them to multiple uses. The most satisfactory method of relating parking facilities to the total campus appears, at least for the present, to be a series of landscaped parking lots located about the campus periphery as conveniently but as unobtrusively as possible.









Residence Halls: While very few community colleges now have residence halls, planners agree that in the near future their addition might be not only possible but often desirable.[1]

For example, a four-year college which views its residence halls as much more than mere sleeping space has designed a special program of lectures, films, and seminars for its residents. This college has found that the academic performance of these students has noticeably surpassed that of non-residence hall students, even when compared with the performance of those students who applied for admission to residence hall and, because of limited space, were unable to be accepted.

Planners also seem to feel, however, that since the degree of maturity which college juniors and seniors might bring to the usual college dormitory would be absent, it is advisable to take special care in planning junior college residence halls. Indoor corridors, for example, are frequently the locale for student disturbance, but since their only real function is access, they could easily be eliminated by designs involving outside entrances to every room. Under such an arrangement, toilets shared by each set of two or four dormitory rooms would further obviate the need for access hallways, while weather protection might be secured by large, overhanging roofs.

[1]Harold C. Riker and Frank G. Lopez, *College Students Live Here; A Study of College Housing*, Educational Facilities Laboratories, Inc., 477 Madison Avenue, New York, N.Y., 1961.

Planners and the Pocketbook: Although money for facilities may be flexibly allotted, it should not be stretched at the expense of quality. If four buildings are constructed with funds adequate for two, four substandard buildings are liable to result. They will probably be educationally inadequate, expensive to maintain, and resistant to future expansion and program change.

Sound planning cannot benefit from political expediency. While political considerations often may affect planning and building programs, it is essential that planners work primarily from an educational point of view. Failure to do this can lead to facilities which are poorly-placed and educationally unsound. While a successful and effective college can improve its political support, no college can compromise its basic educational mission and expect to emerge as a successful and effective institution.

While it is almost impossible to visualize the community junior college of the future, it may be that it will become the leader in higher education in the use of new teaching methods and in experimentation with radical architectural innovation. But whether or not collegiate education in general will adopt available techniques depends upon the intensity of social pressures and upon the willingness of those responsible for higher education to experiment.

As an institution which takes great pride in its concern with teaching, the public junior college should be more disposed to seek improvements in this area. And, as the institution closest to an expanding population, the junior college logically should react most quickly to the greater demands for its services. Unfortunately, it will also be faced by greater public reluctance to foot the bill. But other financial resources, such as government and organized philanthropy, could become available to community colleges for purposes of serious experimentation in accommodating greater numbers of students. The community college seems ideally suited to use tradition-breaking devices since its own traditions and its own identity have yet to crystallize. Hopefully, this crystallization will accommodate the new, the more efficient, and the more effective.

Lewis B. Mayhew
Stanford, California,

May 1966

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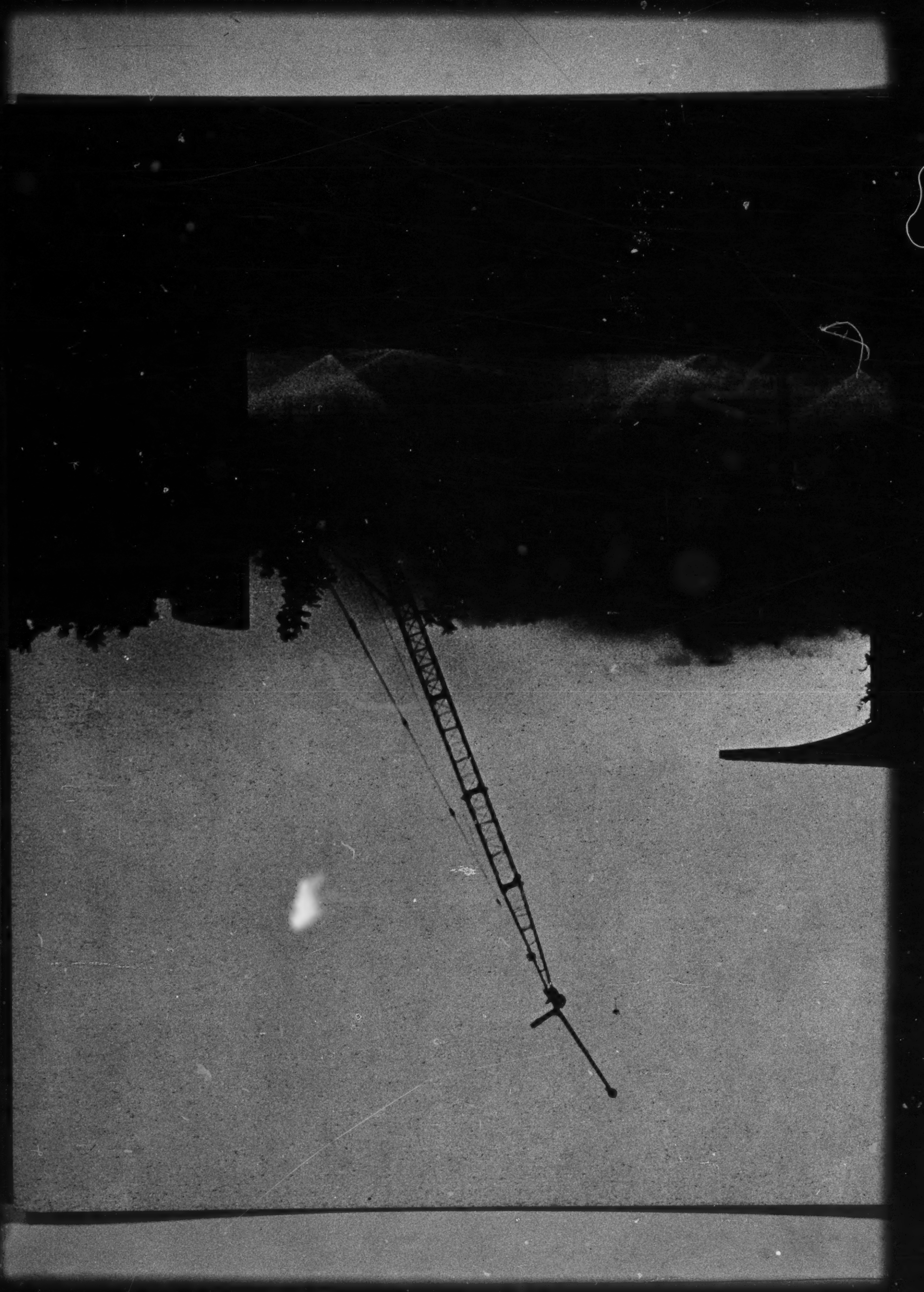
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